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DOCUMENTATION AND ARCHITECTURAL ANALYSIS
OF LITTLE MANOR PLANTATION HOUSE

William Luby Ferguson

A THESIS

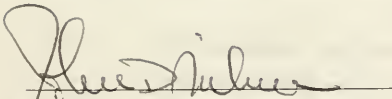
in

Historic Preservation

Presented to the Faculties of the University of Pennsylvania in
Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

1999

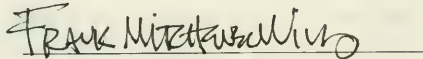


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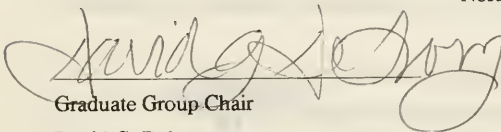
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CHAPTER ONE: INTRODUCTION

The intent of this thesis is to investigate, analyze, and document the structural system, building materials and stylistic elements of Little Manor, a Late Georgian and Federal period plantation house located in Littleton, North Carolina. Little Manor is significant because of its high style architecture and its association with two prominent early owners, Thomas Person and William Person Little. The purpose of the investigation is to determine both the building's initial construction and its alterations through history, providing valuable information for understanding North Carolina's wood frame dwellings built in the late eighteenth and early nineteenth centuries. The architectural data collected will contribute to the National Register files of the North Carolina State Historic Preservation Office. This data will not only provide insights into the building technology employed at Little Manor, but will also be useful in determining the construction chronology of many other structures of the period, many of which have no surviving documents from which their histories can be ascertained.

Little Manor is located one-and-a-half miles south of the village of Littleton, directly on the border of Halifax and Warren Counties. It is situated in a wooded area that is part of a tract of farmland which forms a wedge between two paved country roads, Routes 4 and 1527. It is about twenty miles west of the nearest large town, Roanoke Rapids, which is located on I-95 near the Virginia border. The topography of the region consists of nearly flat terrain of farmland and woods, sparsely populated and accessed by country roads. Farming has been the dominant economic activity of the area for the last two hundred years, but recently has become known for its recreational activities due to the development of Lake Gaston, located a few miles north of Littleton. A topographical map of the area is shown below.

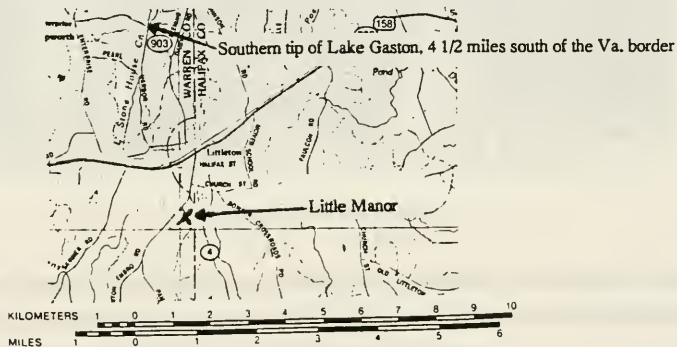


Figure 1: Topographical Map

Little Manor is isolated, being in woods where there is no viable access road or functioning utility services. It has been in a steady state of physical decline for the last fifty years and has been deteriorating at an accelerated rate since last occupied in the 1960s. It has been vandalized and now is totally neglected. In the 1940s, the building was documented by noted photographer Frances Benjamin Johnson and studied by architectural historian Thomas Weston Waterman. In 1964, architecture student L. Scott Garner of North Carolina State College (now University), assisted by other students, documented the building with measured drawings. The timing of the latter survey was fortunate, for since that time major sections of the Federal main massing have deteriorated, the east wing chamber has collapsed, all the porches except the main portico are gone, and all doors and window sashes and most of the interior ornamental details have been vandalized or removed. The photograph below shows a view of the north elevation in its current condition. The chimney on the left is the only surviving component of the east wing chamber, the structural integrity of the main massing is tenuous at best, and the main portico is supported by only its two inside square columns.



Figure 2: North Elevation

The Georgian section, at the south or rear elevation, has fared better, but as seen in Figure 1 at the top of the next page, it has lost its foundation at the southeast corner and weatherboard has peeled off the south gable and below the eaves of the east elevation.



Figure 3: South and East Elevation of the Georgian Section

Ironically, its deteriorated condition provides excellent research opportunities. The framing elements are exposed in many areas, allowing for easy inspection, and normally hidden features can be observed, measured and photographed. Thanks to its current owners, the building is accessible for site inspection and small building material samples can be obtained.

Methodology

In finding a suitable building for the thesis project, the author made inquiries with officials of the State Historic Preservation Office (SHPO) as to what threatened building in northeastern North Carolina was in need of architectural analysis based on both significance and physical condition. Once Little Manor was chosen, the thesis project proceeded in four overlapping stages. The first stage, historical research, involved examining the National Register files and other sources of the SHPO. The National Register files not only had a complete National Register form, the building having been placed on the National Register in 1973, but also had extensive information pertaining to the history of the building and its early owners, chain-of-title research, and photocopies of Francis Benjamin Johnson photographs. In addition to SHPO sources, research was performed at the Fisher Fine Arts Library of the University of Pennsylvania.

The second stage, site analysis, proceeded in two phases. The first phase, occurring in late January and early February, 1999, consisted of ten field trips to the site. The building's framing elements were measured at this time and photo-documentation conducted using both black-and-white and color film. The process of measuring and photographing the building was difficult because the building was shrouded in vines, thorny underbrush and fallen branches. The author had to cut away these obstacles in order to gain access to all sides of the building. A path through the woods and brush also had to be cleared covering a line of about three-hundred yards from the site to the nearest dirt road. In measuring the framing system, some nontraditional methods had to be employed, because of the structure's deteriorated condition and the fact the author was working alone. Exterior horizontal measurements were recorded first, using a one hundred-foot steel tape, the end of which had to be secured to the various inside and outside corners. Exterior vertical measurements were then taken on an extension ladder, using a thirty foot carpenter's tape and a fifteen foot surveyor's leveling rod for unreachable areas. In determining the location of vertical members, lines of nails in the weatherboard were measured where the framing members were not exposed. The inside of the building was then measured and all of the data recorded with field notes. Often framing elements covered by the weatherboard and trim on the outside were exposed on the inside, where either flat plaster or trim had been removed. After the overall framing system was documented, the individual elements, consisting of posts, beams, joists, studs, rafters, braces and their framing connections, were measured. In several situations some conjecture was necessary. The missing east wing chamber had to be based on the framing elements of the west wing chamber. Framing around the chimneys of the Federal section had to be determined largely on ghost marks and notches in the stone. In general, however, the locations of missing elements, particularly rafters and joists, could easily be ascertained by recording notches in plates and sills. Excluding the east wing chamber, approximately 15% of the framing elements of the Federal section involved some conjecture, that of the Georgian section, about 10%.

During the second phase of site analysis, involving another ten trips in early March, 1999, the recording process was completed, non-structural elements analyzed, molding profiles taken, and samples of flat plaster and nails obtained. Nail samples were taken in triplicate so that one set of nails could be given to the SHPO, one set to the University of Pennsylvania, and one set to compliment the thesis report. Four flat plaster samples were taken, one from the cross hall (the transition point between the Federal and Georgian sections), the Federal first floor main hall, the Georgian parlor, and the Georgian second floor south chamber. The samples were then analyzed under 30x magnification to determine if their constituent materials differed markedly from one another. Lastly, six molding profiles were taken from the Federal second

floor west chamber, the cross hall and the Georgian hall and parlor. All of the samples gathered were visually inspected for building chronology analysis.

Drawing the framing system was the third stage of the project. The drawings covered four elevations and one floor plan and were drawn at a 3/16ths of an inch to one foot scale, the smallest scale in which a foot is divided into twelve increments. The elevation and plan drawings were then reduced to fit a standard 8 1/2 by 11 inch page for the thesis report. The drawings of L. Scott Garner were also used extensively for non-structural elements of the building. They had to be retraced because of their condition, then reduced from their 1/8th of an inch to one foot scale to fit on a standard page. The last stage of the project of organizing, writing and editing of the thesis report involved a chapter by chapter review process by the thesis advisor and reader so that any problems could be ironed out before the final draft was reviewed and submitted.

The next four chapters are divided as follows. Chapter Two is a general architectural description of the building as it appeared during the Garner survey, when the building was still relatively intact. It is followed by a brief history of the building with emphasis on its early owners and architectural significance. Chapter Three, the heart of the thesis, documents and describes all of the structural and non-structural elements in detail. It focuses on the two main original construction campaigns of the Georgian and Federal periods. Chapter Four deals with building chronology by examining how the physical evidence provided by framing elements, gross design features, nails, plaster and molding profiles date the sections of the building within both general and specific time frames. It also examines how the physical evidence correlates with the documentary evidence and what information the physical evidence provides that other evidence cannot. Chapter Five deals with building conservation issues and includes a brief conditions assessment, recommendations for the buildings stabilization, and options related to adaptive use for the building in the future. It is hoped that, within the limits of a master's thesis report, enough information will have been obtained so that the building could accurately be reconstructed should it be destroyed in the near future.

CHAPTER TWO: DESCRIPTION AND SIGNIFICANCE

Little Manor is a large, two story, wood frame building divided into two main sections. The Federal section consists of a large, two story main massing supporting a broad, low-pitched front gable roof. The main massing is flanked by single story wing rooms with side gable roofs, which combined with a small center portico, form the north-facing principal elevation. The principal elevation features two, free standing exterior end chimneys of cut stone and rubble located at the intersection of the main massing and wing rooms. The main door is centered on the elevation and has six panels topped by a fanlight. Three nine-over-nine, double hung sash windows flank each side of the central door on the first floor. Each window has elaborate surrounds, with two panels at the base, and a full entablature above the upper sash. The portico, small in scale relative to the main gable, has four square columns representing stylized versions of the Doric order, with base, shaft and capitol. Six stone steps provide access to the portico. Below is a modified L. Scott Garner drawing of the principal elevation as it existed in 1964.

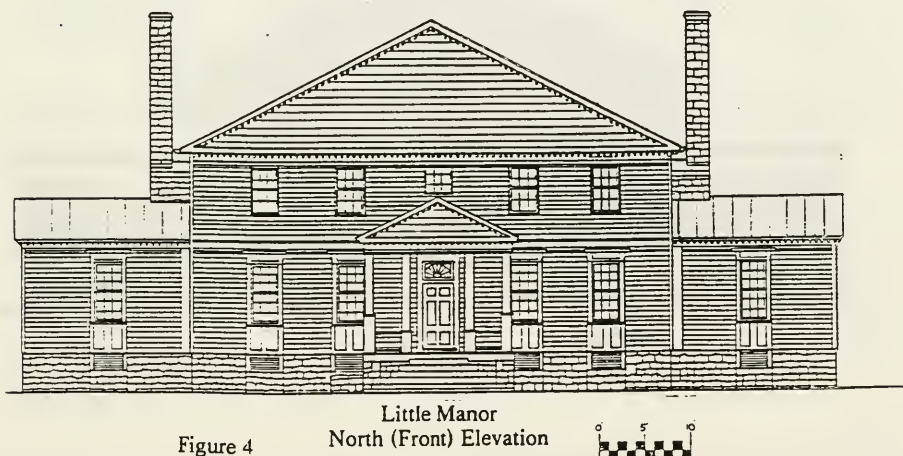
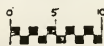


Figure 4

Little Manor
North (Front) Elevation



The main gable and portico roofs have slopes of 25 degrees and their pediments are lined with modillions. The second floor windows are six-over-six double hung sash except for a nine-light fixed window centered over the portico. They are more simply adorned than their first story counterparts. Other trim elements include simple pilasters where the wing rooms meet the

main massing, wide fascia at the eaves and belt course, and simple corner boards. Roofing materials are standing seam metal and the principal wall claddings are wide flush boarding in the gables and weatherboard covering the rest of the vertical envelope. The foundation rises four feet above grade with windows cut into the stonework below the first floor windows. The English basement windows have horizontal dowels acting as grills.

The Georgian section of the building is not visible from the principal elevation. Located at the rear, or south, of the Federal massing, it is also a wood frame structure of two stories but features a steeply pitched gable roof of 53 degrees. It has two, small porches with shed roofs protruding from the east and west elevations. As seen in the next modified L. Scott Garner drawing, the Georgian main massing is slightly west off of center from the Federal south elevation.

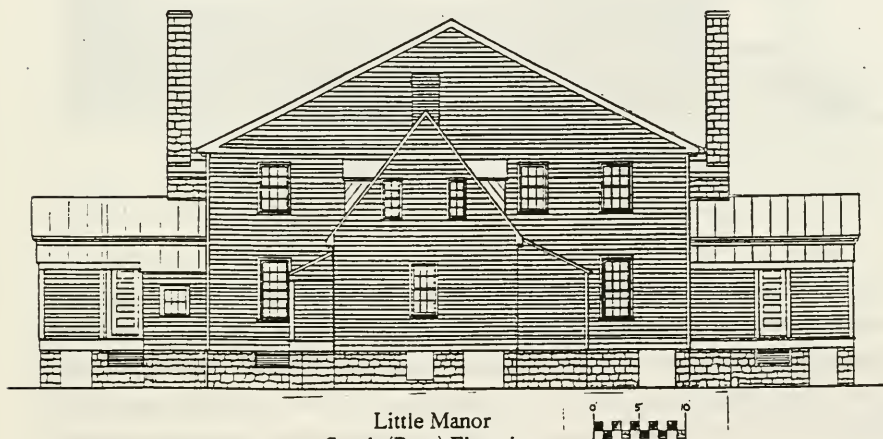


Figure 5

Little Manor
South (Rear) Elevation

The Georgian section has a central chimney of brick laid in stretcher bond. At its south elevation are two four-over-four, double hung sash windows, symmetrically placed in the gable, and one six-over-six, double hung sash window centered on the first floor. The Federal south elevation is similar to that of the north elevation except that it has small open porches protruding from the wing rooms, five panel doors centered on the wing rooms (instead of windows), and a small bathroom addition with a six light, fixed window at the southeast corner

of the west wing chamber. It also lacks the elaborate ornament of the principal elevation, with simple window surrounds and no classical features in the trim elements of the main massing.

As shown in the next L. Scott Garner drawing of the east elevation, the connection between the Federal and Georgian sections is represented by a dotted line. To the right of the line is Federal period cross hall, to the left, the Georgian hall.

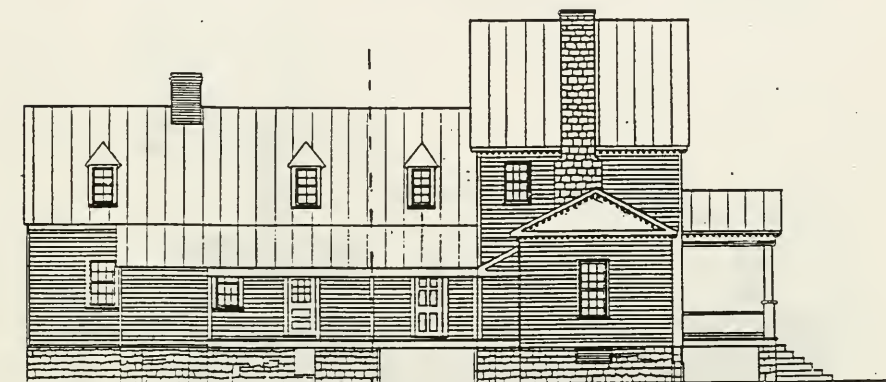
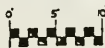


Figure 6

Little Manor
East Elevation



The cross hall has a central door of six panels; the Georgian hall had a glazed door with nine lights and two panels. One six-over-six double hung sash window is located in the Georgian hall, and a similar window is located in the Georgian parlor, near the south end of the building. Three dormers with four-over-four, double-hung sash windows are asymmetrically placed a few feet above the eaves of the Georgian roof. The two dormers to the left of the dotted line service chambers, the dormer to the right, the second floor of the cross hall.

Below the Federal period main roof is a six-over-six, double hung sash window at the southeast corner of the second floor of the main massing. Note that there is no matching window on the other side of the stone chimney. As will be discussed later, this is an important feature as it relates to a major change in the wing roofs which occurred early on in the building's history. Below the chimney is the east wing chamber, with a centered six-over-six window. Modillions adorn the wing side gable roof, the eaves of the main roof and the sides of the portico. Weatherboard covers the whole east elevation and standing seam metal covers all of the roof

structures. The west elevation, shown below, has similar placement of voids and is identical to the east elevation in ornament and cladding materials. They differ in that the west elevation of the Georgian hall has a window and door where there is a door and window on the east elevation. Also, there is a window on the west elevation of the Georgian parlor where there is a door on the east elevation. The other difference is that only the west elevation has a six panel door to the south of the wing room, which serves a bathroom. The mismatching of doors and windows from the east to west elevations reflect alterations over time.

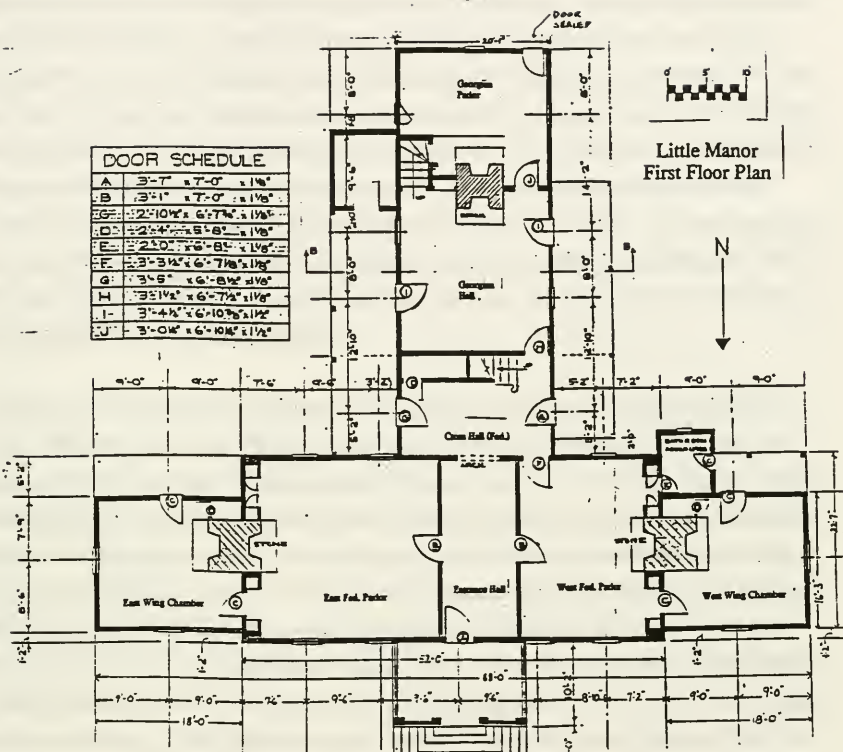


Figure 7
Little Manor
West Elevation



This is clearly illustrated in L. Scott Garner's first floor plan drawing, shown on the next page. At the top of the drawing is the Georgian/cross hall section. The openings line up from east to west but vary in use. The outside room to east of the Georgian stairs is part of the porch structure and its function is unknown. At the bottom of the drawing is the Federal main massing with the two wing chambers. When entering through the principal elevation, one passes through an entrance hall, then may go into one of two parlors, or into the cross hall, which provides a large set of stairs to the second floor. Except for the Federal halls and bathroom, all of the first floor rooms have one fireplace. On each side of the Federal stone fireplaces are recesses with arches and pilasters. Doors enter the wing chambers through the recesses north of the fireplaces.

Figure 8

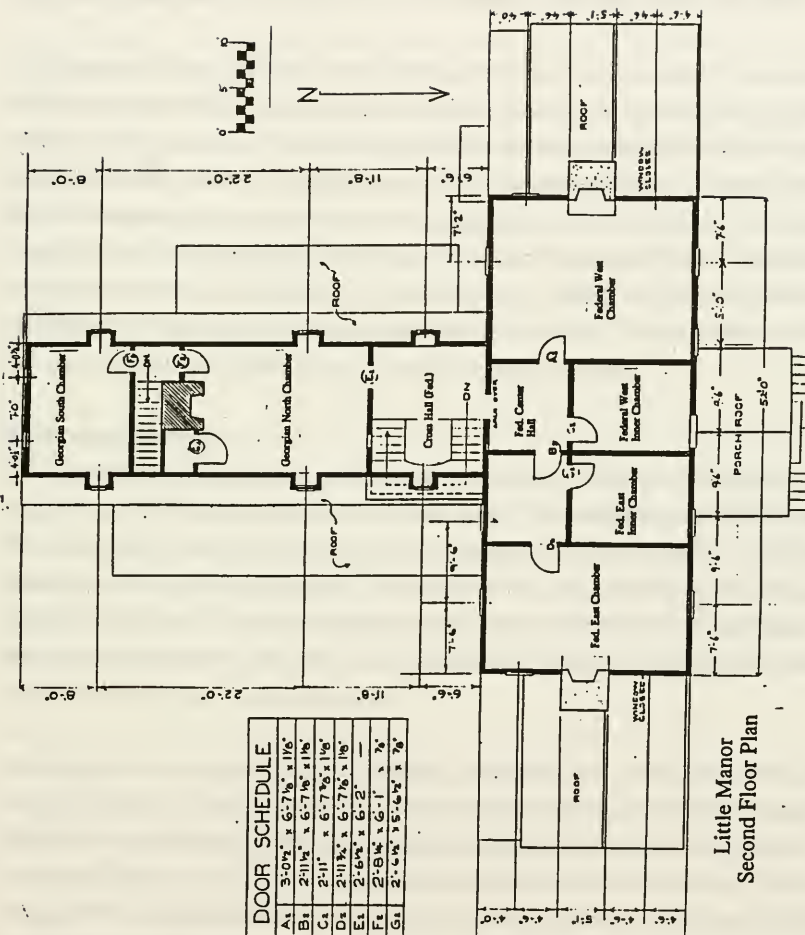


Characteristic of high style buildings of the period, there is a hierarchy of Adamesque ornamental features as one circulates through the first floor rooms. The main entrance hall has a large ceiling medallion, a large classical cornice with an egg-and-dart motif, and an arch entering the cross hall with pilasters supporting decorative voussairs and a keystone. The six panel doors entering the Federal parlors have architraves with classical cornices featuring plant and zigzag motifs and fluted side moldings. The windows of the parlors have plaster arches in relief above the windows and pilasters on the sides. The parlor fireplaces have classical surrounds with swags and sculpted figures in the frieze below the mantels. The east parlor, the most elaborately ornamented room in the building, has stencil work on the ceiling and walls and a large ceiling medallion. Except for the wing chambers, all of the first floor rooms have dado finishes with flat panel wainscoting.

Ornament and finishes are more modest as one enters the cross hall and Georgian first floor rooms. The dado finishes are similar, but the window and door surrounds are simpler, with double architrave moldings. The ceilings have classical cornices with dentils. The doors of the cross hall and Georgian hall have rectangular, glazed transoms. In this section of the building, all of the trim elements are made of wood, whereas in the Federal entrance hall and parlors, much of the ornament is plaster. Both sections of the building on the first floor have a strong sense of grandeur, with large rooms and ceiling heights in excess of 11 feet. Because this description is based on a viewer's perspective in 1964, and since that time most of the Federal section ornamental features have disappeared, a good comparison to an intact interior would be Gunston Hall (ca. 1755), George Mason's plantation house in Fairfax, Virginia. The first floor rooms of Gunston Hall have bolder and more elaborate details than that of Little Manor, but the two structures have several similar Palladian themes and forms. As will be discussed later, Tidewater architecture has a strong influence on Little Manor with a certain time lag involved, where vernacular structures in North Carolina adopted Georgian themes well into the nineteenth century.

In contrast to the first floor, the second floor of Little Manor has smaller rooms, lower ceilings and more modest trim elements. Federal section chambers are accessed by stairs in the cross hall. There are two large chambers above the Federal parlors, and two small inner chambers. The second floor plan, a modified L. Scott Garner drawing, is shown on the next page. The two large chambers have fireplaces and the inner rooms are unheated. The unmarked room adjacent to the Federal Hall is not designated because its function is unknown, but it might of have been a dressing room. Door and window surrounds have smaller architrave moldings,

Figure 9



Baseboards are modest and there are chair rails but no wainscoting. There is no surviving record of the doors on the second floor of both the Federal and Georgian sections.

The second floor of the Georgian section has two chambers accessed by stairs near the south chimney. These rooms and the second floor cross hall have the simplest trim elements in the building, with single beaded chair rails and baseboards and unmolded window and door casings. Because of steeply pitched Georgian roof, the walls of the chambers are diagonals which end at knee walls. On the east side of the chimney is the only second floor closet.

In the basement, there is one room with a fireplace below the Georgian parlor. It has unfinished walls of cut stone and rubble, the principal foundation material, and has barely enough head room to function as a room. The rest of the basement spaces are unheated and do not appear to be viable as living quarters. In describing the rooms according to function, it should be noted that their designations are based on speculated original use, and certainly do not reflect changes in use over time. For instance, it is likely there was originally a separate kitchen outbuilding because of the lack of a large hearth in the main building. Probably the Georgian parlor was converted into a kitchen and the Georgian hall became a bedroom. It also possible the building was converted into a two-family house at some point during its history.

Significance and History

Little Manor is significant because of its historic, wood frame architecture, its high style ornament, and its association with its two earliest owners, Thomas Person and William Little. The Garner survey dates the Georgian section as having been "known to exist" in 1750, and the Federal section as having been built in 1774, but these dates are questionable. The National Register form places the Georgian section as having been built after 1781 and the Federal section constructed shortly after 1804. Based on both the documentary and physical evidence, these two latter dates are the most plausible.¹

The original owner, Thomas Person (1733-1800), was a major land owner and surveyor, having over 82,000 acres in North Carolina alone. He had several diverse and influential occupations: Sheriff of Granville County (1762), Representative to the Colonial General Assembly and Provincial Congress (1764-1794), Brigadier General in the American Revolution (1776), tavern owner (1779), anti-Federalist leader (beginning in 1788), and member of the Board of Trustees of the University of North Carolina (1789-1795). It is believed that the Georgian section of Little Manor was one of two residences used by Person, the other being in Granville County. At his request, he was buried in Littleton, then known as Personton. It should be noted that

there is no documentary evidence which places an exact date on the construction of the Georgian section. Inventory records indicate that he lived in Personton, and since he died in 1800, all that can be said is that he built the Georgian section sometime before 1800. The date of 1781 referred to in the National Register form is based on the 1771 will of his father, William, which stipulated that Thomas inherit the family's Warren County properties upon the death of Thomas's mother, which occurred in 1781. It is therefore assumed that Thomas built the Georgian section after inheriting his father's land. The author has studied several deeds and wills of major land owners in Virginia and North Carolina. Because of the scale of land ownership, specific descriptions of improvements on the land are often omitted, with the focus being on income-producing property, such as choice farmland, cattle and slaves. In the case of the Person family, where there are thousands of acres involved, it is not surprising that there is no specific mention of dwellings or messuages in the deeds and wills. The family likely owned dozens of dwellings and other structures in the area. Often probate records will refer to "land and improvements", with no other descriptors. Ironically then, it is the probate records of large plantation owners that are most vague in describing structures. The Georgian section of Little Manor may have existed years before Thomas Person inherited the property in 1781, or may have been built shortly before his death in 1800.²

Upon Person's death in 1800, the property was transferred to his sister, Mary Ann Person Little. In 1804, she transferred the property to her son and Thomas Person's nephew, William Person Little (1765-1829). As in the case of Thomas Person, it is assumed that the William P. Little began construction shortly after acquiring the large estate. It is believed Little built the massive Federal Period section, thus completing the building. Little was not accomplished as his uncle in terms of his career. He was a State Senator (1804-1806), but was not known for other activities except that of a wealthy land owner. He did manage to have the town of Personton changed to Littleton.³

Little died in 1829, but his wife, Ann, lived on the estate until 1846. The property then was transferred to their daughter, Mary Ann Moseby, who was married to Richard M. Mosby until his death in 1849. At this time, the estate acquired the name Moseby Hall, which is still widely used today. In 1880, Mrs. Moseby lost the property through foreclosure and it was purchased by Ellen D. Leach. At this point, the deed research becomes sketchy, but it is known that the property was purchased by the William Skinner in the early 20th century, then transferred to his nephew, William P. Skinner. The property has been in the Skinner family since that time.⁴

Other than the bathroom, built in 1928, there is no record of alterations to the building since the

time of William P. Little. Obviously, some alterations must have been made since 1826, particularly the addition of the rear porches, updated utilities, and changes made to the structure as the result of maintenance and changes in use. These changes will be further addressed in the chapter on building chronology.⁵

CHAPTER THREE: ORIGINAL CONSTRUCTION CAMPAIGNS

This chapter will address the building technology of the two original construction campaigns representing the Georgian and Federal periods. It will focus on the framing system, cladding materials, trim elements and other finishes, including ornamental details. Little Manor is a remarkable structure in that a relatively low number of alterations were performed on the building after the middle of the nineteenth century. Except for changes in fenestration in the Georgian section, the addition of a bathroom near the west wing chamber, and the installation of standing seam metal roofs, the overall plan and building materials have not changed markedly over the last 150 years.

Foundation and Framing System

In both the Federal and Georgian period sections, the foundation is made of wet laid rubble and some cut stone. The stone appears to be a type of tan colored gneiss and was also used for the base of the Georgian chimney and most of the components of the Federal chimneys. The foundation walls rise about four feet above grade on the exterior. The walls in the basement areas vary in height from about seven feet in the Georgian section, to four feet under the cross hall. Lime mortars were used in the joints, and were struck to form a crude ribbon design. The photograph below shows a section of the foundation below the main portico. The spots in the middle of the picture are some type of oxidized ferrous material.



Figure 10: Gneiss Foundation Below Main Door of North Elevation

Large sills rest directly on the foundation walls. They vary in size from eight-by-twelves to twelve-by-twelves, depending on the elevation, but are all twelve inches in width. Typical of historic braced framed structures, posts, primary studs, and secondary studs are mortised and tenoned into the sills and top plates, forming the exterior walls around the perimeter of the building. Gable structures are similarly constructed, forming the classic A-frame design as seen in the next diagram.

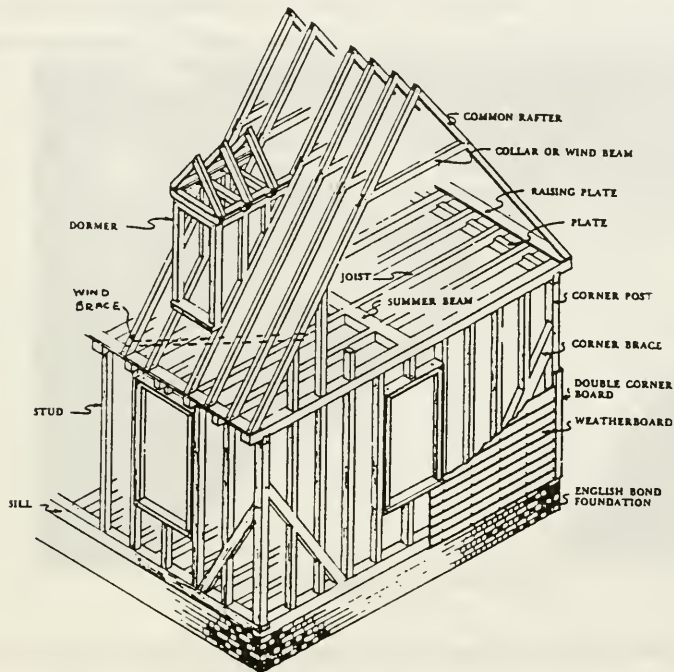


Figure 11: Generic Tidewater Braced Frame Structure Similar to Little Manor. ¹

Beams, joists and rafters tie the walls together, forming a series of horizontal (floors) and diagonal (roofs) planes. Large diagonal corner braces are strategically placed to prevent the building from racking. Small wind braces diagonally traverse the rafters for the same reason. The construction seen in Figure 11 is very similar to the Georgian section of Little Manor.

The Georgian section differs in that it has no summer beam, the foundation is stone, and it has a basement spaces with windows and plenty of head room. Both the Georgian and Federal sections also differ from typical Tidewater construction in two other key design elements. At Little Manor, beams and floor joists rise three to four inches above the horizontal plane formed by of the sills and plates, and the framing elements surrounding the door and window voids are much heavier. The drawing of the north elevation on the next page illustrates these features. The line of projecting attic joists and the dotted lines on the lower levels representing joists hidden by vertical framing elements, all marked by arrows, show how the floor levels are slightly higher than the planes of sills and plates. Figure 12, taken at the basement level under the Federal west parlor, shows a typical floor joist and sill connection.

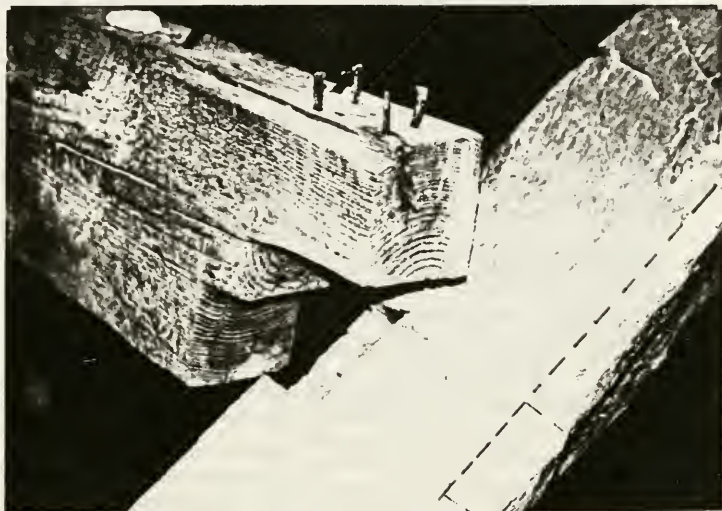


Figure 12: Federal Section Joist and Sill

It is a variation of a shouldered tusk and tenon joint, where the joist laps onto the sill. When the joint is connected, there is a four to five inch gap between the outside of the sill and the joist end, illustrated by the dotted line. Unfortunately, this sill is brown rotted, and normally is twelve inches wide rather than the eight inch width seen. The dotted area represents a band on the outer edge of the sills and plates on which all of the vertical framing members are placed, connected by mortise and tenon joints, and in some cases, nails for secondary studs. The joist is four inches thick and nine inches high. For the purpose of identifying the location of photographed framing details, the Figure Numbers of the photographs match the circled numbers on the framing drawings.

Figure 13: North Elevation Framing System

Key:

PS: PRIMARY STUDS

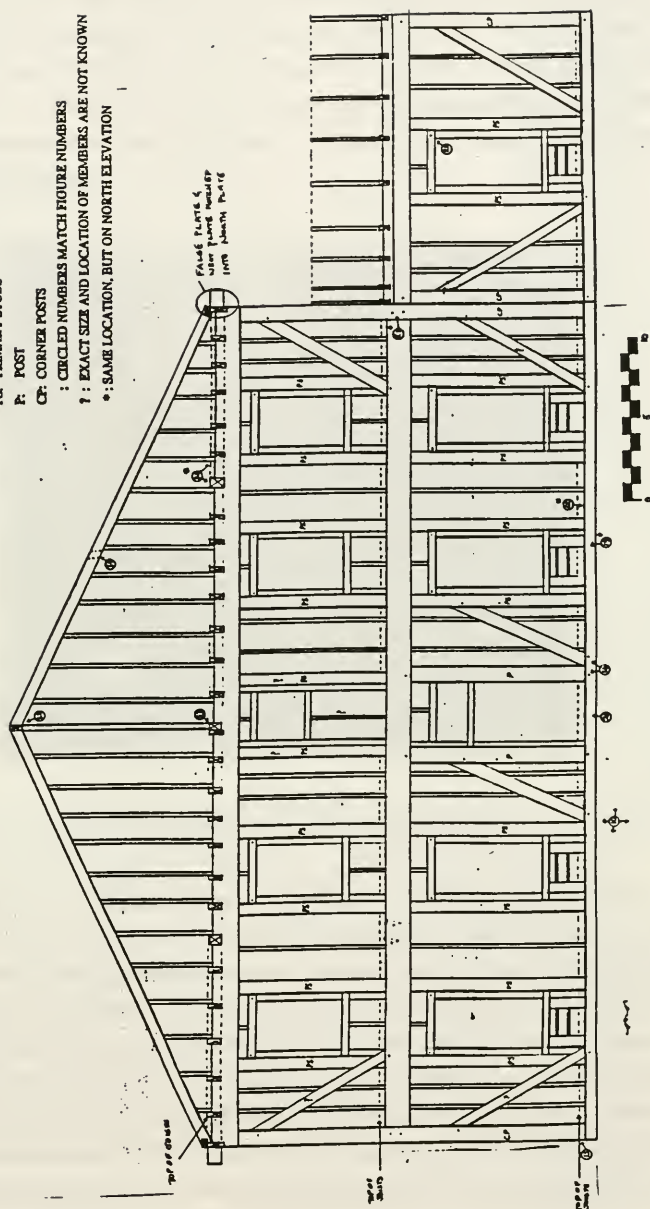
P: POST

CP: CORNER POSTS

: CIRCLED NUMBERS MATCH FIGURE NUMBERS

1: EXACT SIZE AND LOCATION OF MEMBERS ARE NOT KNOWN

*: SAME LOCATION, BUT ON NORTH ELEVATION



As seen in the north elevation drawing, the structural members are massive, particularly the first and second floor top plates, which are eighteen inches in height. The corner posts (CP) are ten-by-twelves. Timbers are cut into the shape of an L as seen in Figure 14, taken at the southwest corner of the Georgian section, which is typical of corner posts throughout the building. The inside dimensions of the L are six by eight inches, forming a perfect corner to receive lath and plaster.



Figure 14: Georgian Section Southwest Corner Post

The complexity of the corner post and sill connections are shown in Figure 15. The photograph is taken at the northeast corner of the Federal section. The rotted sill (center left) is a twelve-by-twelve which receives the tenon of the corner post. A second mortise and tenon joint is located at the intersection of the east sill and the north sill, but this is not visible. In addition to having hidden joints, these connections were also difficult to analyze because the sills and plates differ in size and in the planes of their connections. This is illustrated in the oval shown at the northwest corner of the north elevation drawing. The vertical cross section member (center left in oval) is the west second floor top plate, a four-by-twelve. It is mortised and tenoned into the massive north plate and rises three inches above it, to the same level as the top of the joists.



Figure 15: Federal Section Northeast Corner Connection

All of the vertical structural members have four to five inch thicknesses in order to fit between joist or beam ends and the outside perimeter of the building. Figure 16 shows vertical framing elements near the main front door. The post on the left is a four-by-twelve and the adjacent brace, a four-by-nine. Both are mortised and tenoned into the sill and have single pins.



Figure 16: Federal Section Post and Brace Near Main Door

As seen in Figure 16, there is ample space for the vertical members and the lap ends of the joists, because of the twelve inch width of the sill. However, on the second and third levels, there is less than five inches for these members to rest on. Figure 17 shows the first floor top plate and surrounding framing elements as seen from the cross hall. Two large bearing posts are seen above and below the plate. To the left of the surveyor's rod is the lap end of a joist notched into a bevel scarf joint in the plate. This type of construction requires careful design, as complications can arise if a joist end directly meets a post or stud.

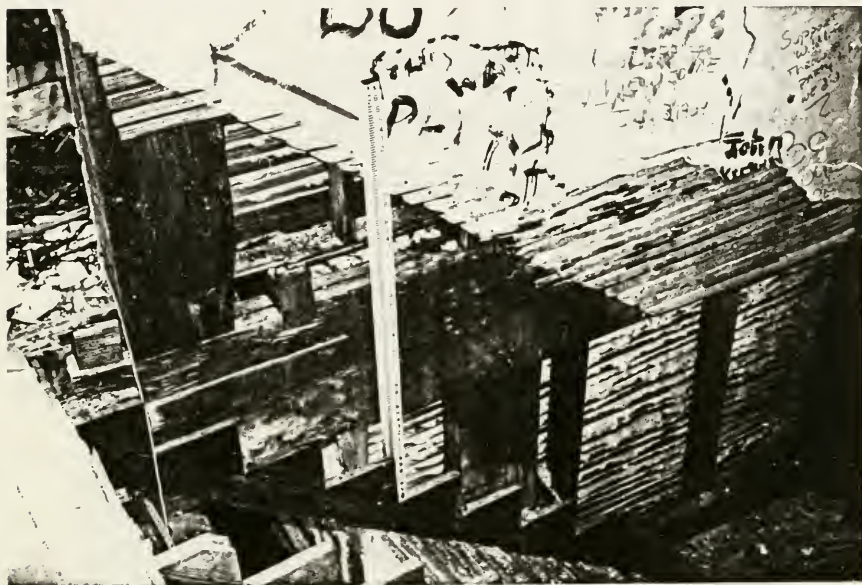
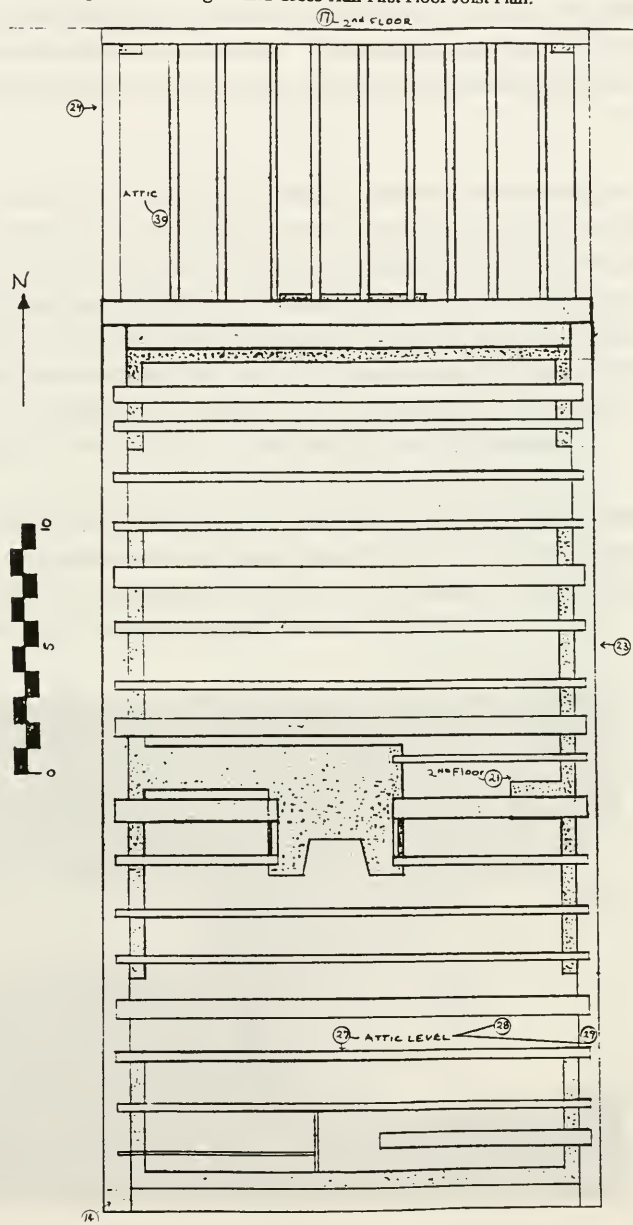


Figure 17: Second Floor Plate in Federal Cross Hall

Most of the floor joists in both the Georgian and Federal sections are four-by-nines or four-by-eights, but at key points may serve as beams carrying interior partitions. The drawing on the next page shows the first floor framing plan of the Georgian section and cross hall. Note how the joists and beams do not carry all the way to the outside edge of the sills, allowing room for vertical members. Beams are placed not only under walls, but also in the middle of rooms, providing stiffness to the flooring. At the top of the drawing, joists run perpendicular to those of the Georgian section and these elements support the cross hall. As will be discussed later, this is structurally the weakest area of the entire building. The joists are smaller, there are no intermittent beams, and small piers or single stones are used to carry the sills.

Figure 18: Georgian and Cross Hall First Floor Joist Plan.





At the bottom of the drawing are two small joists at the southwest corner. It appears that a small set of stairs accessing the English basement room were located here, then replaced with thin members when the room was no longer in use. The beam to the right was originally part of the stair frame, but now floats on its interior end. It remains intact because of flooring nails.

The first floor framing plan of the Federal main massing is similar to that of the Georgian section in both the spacing and size of beams (and joists) as well as their connections to the sills. The only difference is that two twelve by twelve inch summer beams support the joists of the Federal parlors and main hall. They are centered in the rooms on the east/west axis. Structurally this may be a redundant feature, as the joists and beams span less than twenty feet across these rooms on the north/south axis. Historically, spans of less than twenty feet did not require the addition of a summer beam, though they do provide stiffening qualities to the floors. This also explains why there are no summer beams in the Georgian section.

The connections of floor beams to sills differ from those connecting joists to sills. The next photograph shows a large beam under the Federal west parlor. The beam to the right has two flat tenons. The lower tenon, two inches in thickness, enters the center of the north sill. The upper tenon, three inches in thickness, laps onto the top of the sill.

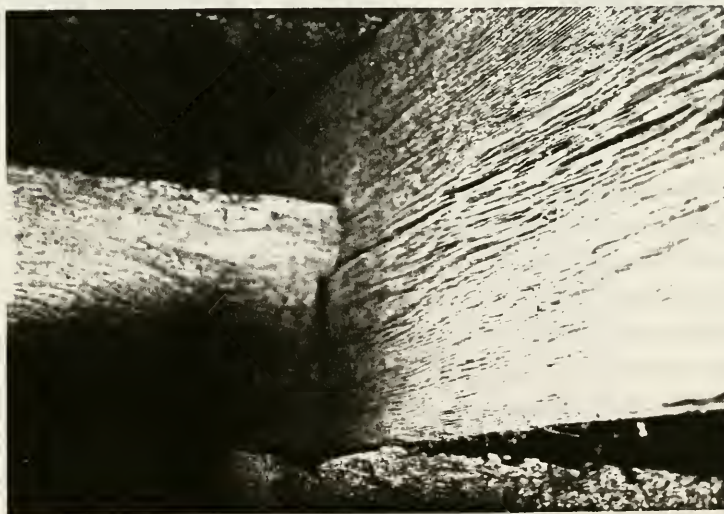


Figure 19: Federal Section West Parlor Beam and Sill Connection

Large, bevel scarf joints are used for the Federal plates and sills of the east/west axis. Shown below, and in Figure 17, these joints are nearly three feet in length. They are actually lap joints with beveled ends that are pinned in two locations. The pins of the sill scarf joint are not visible, since they run vertically under the threshold. Scarf joints are used when there is a continuous run of plate or sill over twenty feet. Scarf joints for sills are horizontal; for plates they are vertical.



Figure 20: Sill Scarf Joint under Federal Section Front Door

Most of the interior partition walls have framing elements and joints which are identical to those of the exterior walls. If, however, a partition wall is added at a later date than the original construction, it is not possible to have mortise and tenon joints on each end of a stud or post. In this situation, the stud will be mortised and tenoned into a joist, beam or plate at the base, then will be half lapped onto a framing member above. Nails are then used to secure the half lap joint. In the case of the knee walls of the second floor of the Georgian/cross hall section, the bases of studs are mortised into a floor joist, then the tops of the studs are bevelled at the same angle of the rafters and secured onto the rafter with nails. Figure 21 shows the base of a knee wall stud in the stairwell of the Georgian section. Note the shallow mortise and tenon in the middle of the photograph and the cleat nailer on the joist to the left, secured with wrought nails.

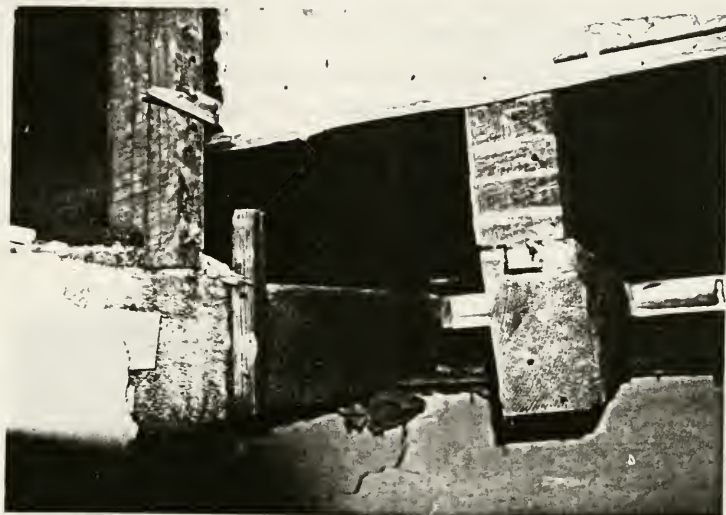


Figure 21: Georgian Stair Well and Knee Wall Stud

Mortise and tenon joints vary widely in size and in the depth of the tenons, but never penetrate all the way through the adjoining members. The deepest mortises stop within one-and-a-half inches of full penetration. The largest joints occur where plates meet corner posts in the Federal section. Shown below, the tenon is short but wide and is secured with two pins.



Figure 22: Federal Section Second Floor Plate and Corner Post.

Framing members of door and window surrounds of the Georgian and Federal sections differ in that those in the Georgian section have lighter components and more commonly utilize cleats below window sills. Shown below, from the Georgian hall, the cleat is notched into the nearest primary stud, then secured with a triangular block and wrought nails. In the Federal section, there are cleats used on some of the secondary windows, but generally the window sills are not notched into the adjoining vertical members. Instead, the sills are secured to cripple studs between the main studs, similar to the procedure used in modern platform framing.



Figure 23: Georgian Hall East Window Cleat

In both the Georgian and Federal Sections, most of the doors and windows have jambs, sills and headers that are molded on one edge in order to receive the sashes and doors. On doors, the jamb is molded to form stops. The photograph at the top of the next page shows the jamb of the Federal cross hall west door. The rotted area is a tenon which was secured to the sill. The molded area of the jamb is cut from the same piece of wood as the tenon, although the photograph makes it appear they are separate. Note the applied casings and band moldings inside and outside the jamb. An applied strip molding is seen on the left side of the jamb, probably to provide a stop for a storm door. Applied wood moldings are used extensively in both the Georgian and Federal sections for casings, band moldings, baseboards, cornices (Georgian only), and exterior trim elements.



Figure 24: Federal Cross Hall East Door Jamb

The framing elements of the window surrounds for the Federal section are generally larger and more elaborate than their Georgian counterparts. Figure 25 shows the top of a window surround of the Federal west wing room.



Figure 25: Federal Section First Floor Window Frame

As the photograph shows, the six inch members are mortised and tenoned at the top corners. Channels and stops are molded on the inside edges to receive sashes. Note the unmolded weatherboard to the right of the missing outside casing. As will be discussed later, there is a hierarchy of weatherboards involving four distinct types.

Thus far, the framing elements of the vertical and horizontal planes of the building have been described. The framing system of these planes are similar in comparing the Georgian and Federal sections, the main difference being that the Federal period components are more standardized in maintaining four to five inch thicknesses. It is likely that the builders of the cross hall and Federal main massing were inspired by the framing design features of the Georgian section. However, in the construction of roof structures, the two sets of builders part company and it is the design of these structures which most clearly differentiates the Georgian and Federal periods. The next diagram shows the south elevation of the Georgian section.

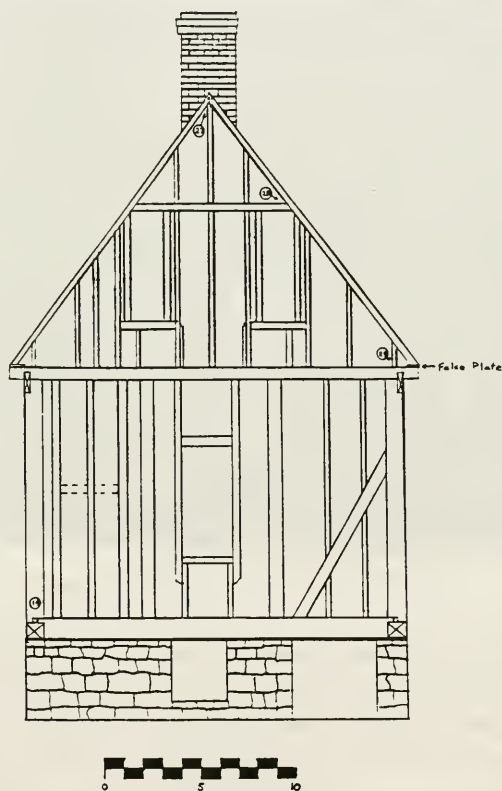


Figure 26: South Elevation of Georgian Section

The drawing shows how the Georgian framing system is similar to that in the Federal section below the eaves. Like the north elevation of the Federal section, the east and west plates, seen in cross section, are notched into the corner posts and south plate. In the Georgian section, the east/west plates project below the north/south plates, whereas the opposite occurs in the Federal main massing. Otherwise the heavy joints are identical below the eaves, including the connection of corner posts to the sills and the mortise and tenon joints of braces and primary studs.

The roof structures differ dramatically. As seen in the Georgian Section elevation, the roof is steep, with a fifty-three degree roof pitch. The rafters are half lapped and pinned at the ridge as viewed in Figure 27.



Figure 27: Georgian Section Rafters at Ridge

The rafters are generally three-by fours, but vary slightly in size. They are spaced one to two feet on center. About five feet below the ridge, they are interrupted by collar ties which are connected to the rafters by half dovetail lap joints as seen in Figure 28. The dovetail joints are secured with wrought nails, the most common framing nail used in the Georgian section. At the gable ends, studs are mortised and tenoned into the plate, then are toenailed into the end rafters or are mortised and tenoned into the end collar tie.



Figure 28: Georgian Section Half Dovetail Lap of Collar Tie

The rafters run down onto a false plate at the ends of the main plate and joists. Figure 29 shows this design feature. Note how the rafters are centered on the first floor ceiling joists. In the foreground is a knee wall stud and baseboard.

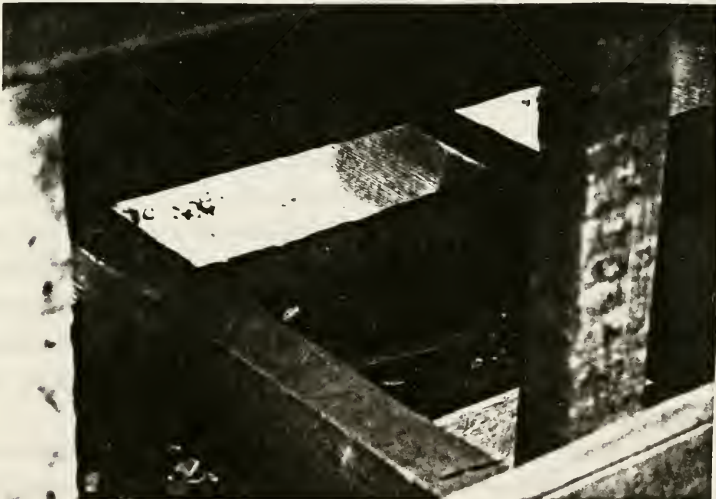


Figure 29: Georgian Section False Plate Detail

The roof frame of the Federal Section cross hall is similar to the Georgian section, because it is basically a continuation of an existing roof structure. They differ in that the false plates of the cross hall are wider and thicker, its rafters are not always centered on the ceiling joists, and the cross hall collar ties are not notched into the rafters. Figure 30 shows a typical cross hall collar tie where it meets a rafter. The end is hacked so that the shafts of the nails can penetrate into the rafter.



Figure 30: Federal Cross Hall Collar Tie End

The roof frame of the Federal section main massing has an overall form similar to Tidewater structures, but differs in many design details. Figure 31 is a drawing of a typical roof structure found at Williamsburg in the last half of the eighteenth century. The use of structural purlins were common when dealing with wide span construction. The main Federal roof of Little Manor has a span of fifty two-feet, so like the Figure 31 drawing, requires a pair of structural purlins on each side of the massive gable. Without the purlins, the rafters would have to be large and thick, and nearly twenty-eight feet long.

At Little Manor, the purlins are supported by a series of slender posts and diagonal braces. Little Manor differs from a typical Tidewater structure in that it has a large ridge board where the rafters join at the ridge, an unusual feature for an early nineteenth century structure.

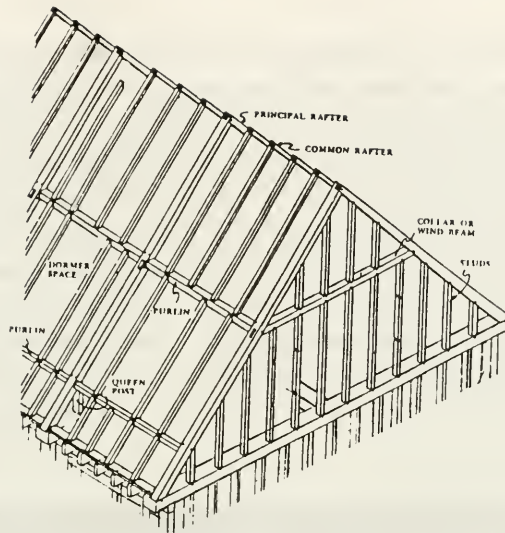


Figure 31: Drawing of Tidewater Roof Structure³

In Figure 32, the ridge board is seen at the top of the picture. It is a four by eight, and receives the tenon of a four by seven gable center post. The band rafters on either side of the post are also four by sevens notched into the post and ridge board but the exact nature of the connection could not be examined. The brace at the bottom is a three by twelve, and is also notched into the post.

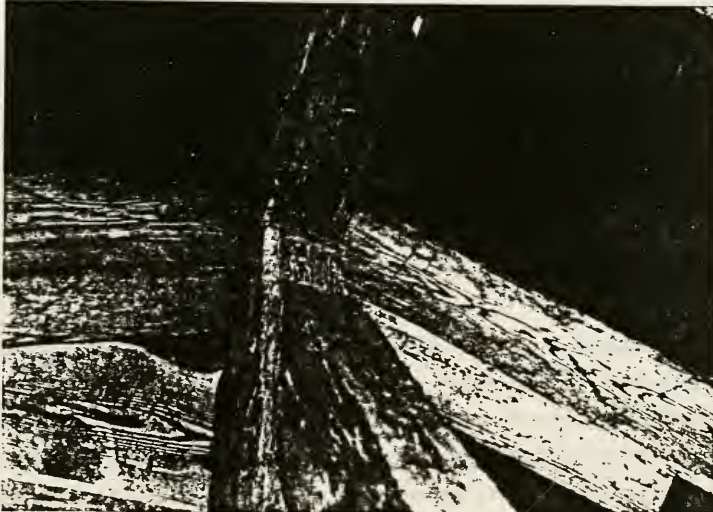


Figure 32: Federal Ridge Board Detail

At the base of the gable center post is the most complex joint in the building, seen in Figure 33. At the upper right, the post is notched into a five-by-eight center beam. The pointed pin of the mortise and tenon joint of this connection is clearly visible in the middle of the photograph. The beam is in turn double-notched into the massive upper plate, as seen below the pin. Double-notching refers to the beam and plate being cut so that the notches do not remove too much of the wood mass of one of the two members, thus providing a stronger joint. A third joint is seen in the lower left, near the shaded area. This is the center bevel scarf joint of the second floor top plate and extends the full eighteen inches through the height of the plate. One of the four pins of the scarf joint is barely visible in the lower center part of the picture. The double-notch joint is used throughout the Federal and Georgian sections, wherever joists and beams meet plates.



Figure 33: Joinery at the Base of the Federal Section Gable Center Post

The four structural purlins which support the large gable roof are four-by-sevens. Figure 34 shows one of the upper purlins, as well as the rafters, posts and braces connected to it. The rafters in the foreground are double-notched into the purlin. The rafters on the other side of the purlin are not notched, but have beveled ends and are simply toenailed into the purlin with cut nails. Below and to the right of the center rafter are a pinned mortise and tenon joint of a post, and a lap joints of a brace over the post and purlin.

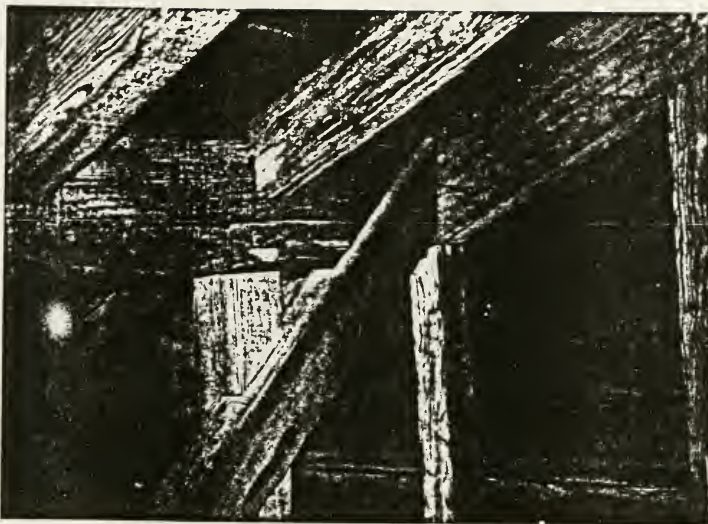


Figure 34: Structural Purlin of Federal Main Gable Roof

Perhaps the most unusual feature of the roof framing of the Federal main mass is the existence of diagonal framing of the attic joists near the east and west elevations. A sketch of this joist plan is provided below. This framing anomaly is also marked on Figure 13.

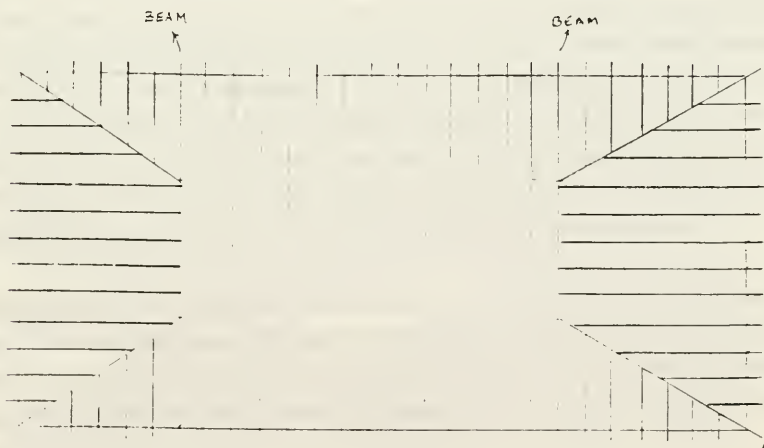


Figure 35: Attic Joist Plan of Federal Main Massing

Figure 36 shows the southeast section of the attic joist plan. A diagonal member, called a dragon beam, is seen in the lower left, a seven-by-ten, and joists are double notched into it. Rafters are seen running onto a thick false plate. They have V-shaped notches which meet the top and inside edges of the false plate and are toenailed with cut nails.

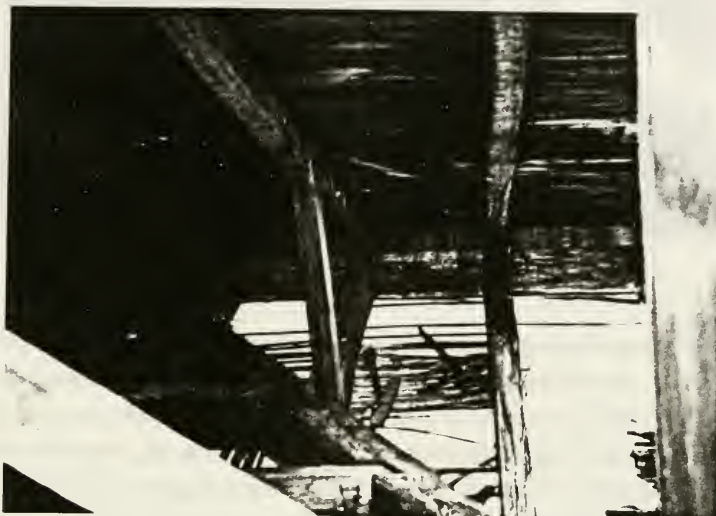


Figure 36: Federal Main Mass Diagonal Framing of Attic Joists

At first, the author was at a loss as to why such diagonal framing elements were used for the attic joists, but it became apparent that this design was necessary in order to have projecting joists serve as the framing component of the cornices on all four sides of the building. The dragon beam shown in Figure 36 runs through the corners of the building and is cut in the shape of a V at the end. The diagonal layout allows joists to run through the east and west elevations. As will be seen in the roof frames of the wing rooms and the main portico, there is another method by which eaves can be created, but they are considerably less sturdy.

The roof framing of the wing chambers and main portico have half lap joints for the rafter pairs and have no ridge board. The roofs slope at a twenty-five degree pitch like that of the Federal section main massing. The rafters are slender, being primarily two-by-fours instead of three-by-fours used in the main massing and Georgian section. The next photograph shows typical rafter pairs.



Figure 37: Federal Main Portico Roof Rafters

The attic joist plans of the wing rooms and portico are similar to the main massing roof, with one major exception: instead of diagonal framing elements, there are a series of small joists acting as outriggers placed perpendicular to the band joist near the gable. Shown below, two of the small outriggers are seen projecting through the gable, providing a nailer for the fascia. Note how the outriggers have a thin lap joint over the band joist. The band joist and its parallel joists project through the east and west elevations of the portico, creating nailers for soffit and fascia on the sides. This method is not as structurally strong as that of the diagonal framing of the principal elevation, but is an adequate design for small structures.



Figure 38: Federal Main Portico Attic Joist Framing

The structural system just described represents about ninety percent of the wooden framing elements in the building. Dormers, stair carriages and basement window framing elements were not covered, but these features follow the basic system employed for the main structure. Because the Georgian east and west elevations were subject to extensive alteration in the use of their openings, they will be further discussed in the chapter on building chronology.

Although the exact wood species of the framing elements were not identified, they are all made of softwood. The larger members appear to be white pine and smaller features southern yellow pine, but further analysis is necessary. How these elements were milled is another important consideration. About a quarter of the members, usually basement beams, attic posts and some rafters, were hand hewn with an adze. Some members were pit sawn, but most of the framing members were sash sawn. Several elements would be hand hewn on one side, then sash sawn on the other three sides. In many situations, the surfaces were so smooth that milling marks could not be easily identified. The structure is remarkable for the low number of elements that were circular sawn, indicating that most of the members are intact from the two original construction campaigns.

The primary framing nails used in the Georgian section are wrought nails with spoon-tipped shanks. The primary framing nails used for the Federal section are early machine-cut nails with handmade heads. Many other types of nails were used for nonframing elements, and these will be addressed in the chapter on building chronology. The only other metal fasteners that survive in the building are slot screws used for the few remaining hinges and cabinet catches. Most of these are pointless screws, which were in common use before the introduction of pointed screws in the late 1840s. Unfortunately, since all of the doors have been removed and most of the hinges, no thorough analysis of screws, hinges and locks could be performed. The building also lacks any other type of metal fasteners, such as anchors and shutter dogs, but the latter might have existed at one time based on holes around the windows.

Chimneys

Little Manor has three chimneys and ten fireplaces. The three Georgian fireplaces above the basement level are brick, and the English basement fireplace is stone. The six Federal fireplaces are stone with brick finishes in and around the fireboxes. The bricks are oversized and handmade, with lime mortars used for the joints. The double chimney of the Georgian section services the English basement room, the hall, parlor and second floor north chamber. The fireboxes of the Georgian hall and parlor are in such a deteriorated state that their original forms could not be ascertained, but throats and flues are still intact. The throats angle toward the firebacks, then the flues run up through the stack, making left or right turns above the throats in order to accommodate multiple funnels.

The English basement fireplace is of moderate height, with slightly diagonal cheeks and a deep back. Shown below, its examination was hampered by its being in a foot of water, but the massive lintel is clearly visible.



Figure 39: Georgian English Basement Fireplace (Below Georgian Parlor).

Note the hole above the lintel, likely a flue for a stove, and the beam in the foreground, centered in the Georgian parlor to provide stiffness. Throughout the building, the fireplaces were built around the framing elements, as evidenced by ghost marks of mortar molded around the members.

The fireplace in the Georgian north chamber, the most intact in the building, is deeply recessed and features an elliptical arch. The exterior and interior surfaces are lime plaster parget and the cheeks angle slightly toward the back.



Figure 40: Georgian North Chamber Fireplace

The two Federal double chimneys service the east and west parlors, the second floor east and west chambers and the two wing chambers. In terms of design, they are similar to the Georgian English basement fireplace, but the Federal parlor fireplaces have taller openings and a coarse of finished brick in the firebox and on the surround. The west parlor fireplace, shown at the top of the next page, also features a back made of iron straps. Mitch Wilds, Senior Restoration Specialist for the North Carolina SHPO, speculates that the installation of an iron back might of been a response to use of coal as a fuel. The iron back would be more resistant to the higher temperatures achieved by coal-burning fires as compared to other materials designed for wood. The firebox was also reduced in size for coal burning use.

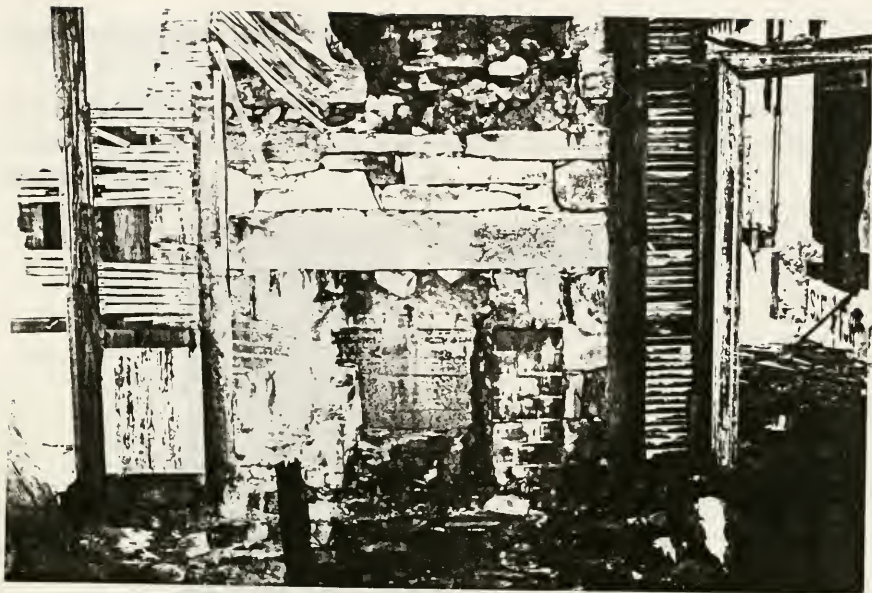


Figure 41: Federal West Parlor Firebox

The only other fireplace in the Federal section accessible for examination was the that of the Federal west chamber. Shown below, it has a brick fireback and a relatively low opening. The iron support at the top of the picture was installed in response to a cracked lintel.

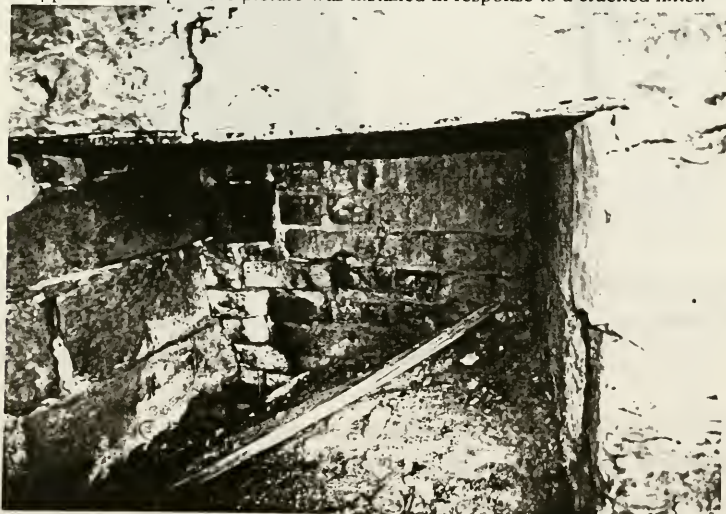


Figure 42: Federal West Chamber Firebox

Exterior Cladding Materials and Trim Elements

The vertical envelope of Little Manor is clad in four types of weatherboard. The principal elevation has the most elaborate weatherboard molding, featuring a small and large bead over a fillet as shown below.



Figure 43: Weatherboard Detail of North Elevation

The Federal east, west, and cross hall elevations have molded weatherboards with one fillet and one bead, as seen on the top of the next page. Note the window, with its beveled sill over a fillet and small cyma recta molding.

The weatherboard throughout the building bevels from a quarter inch at the top to a half inch at the molded edge, and overlaps one to two inches. The exposure varies, but the average weather for the Federal section is five inches. For the Georgian section, it is about five-and-one-half inches.



Figure 44: Federal West Parlor South Window and Siding

The Georgian section weatherboard also has a fillet with a single bead, but the bead is less rounded than that of the Federal section. The Georgian section window sills are thinner, and they form a variation of a cavetto molding under which is a wide fillet and matching bead. A peg is clearly visible in the center of the photograph.



Figure 45: Georgian West Parlor Window and Weatherboard

The fourth type of weatherboard is unmolded, and was used primarily for the porch structures and repaired areas. In all cases, the weatherboard was applied directly over the vertical framing members, with small nailers used where there were large gaps.

The window and door surrounds of the Georgian section vary considerably, but all have single architrave moldings with beaded edges near the sashes or door jambs. Except for the first floor of the principal elevation, the door and window surrounds of the Federal section also have varying single architrave moldings, with the cross hall doors having the widest doorcases. It was difficult to analyze these details because of the many slight variations as the result of changes performed during the building's first fifty years. In short, the window surrounds for both sections may be described as having fairly flat profiles, even the original Georgian windows, which the author expected would be bolder. All of these windows can be seen in elevation photographs in the appendix.

Because all doors and window sashes are missing, they cannot be described beyond the elevation drawings provided by L. Scott Garner. The L. Scott Garner drawings, however, did include one detail drawing of a North Elevation first floor window, and a photograph of this detail is on the next page.

Although whole window sashes are missing, two Federal muntin profiles were obtained, one from the cross hall east door transom and one from the southeast window of the Federal parlor. They are shown below. The muntin on the left is from the cross hall transom.

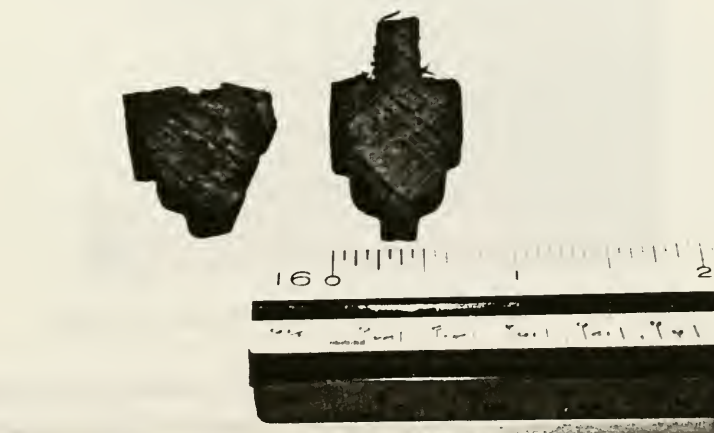


Figure 46: Federal Section Muntins; Cross Hall Transom and East Parlor

These muntins were compared to other muntin profiles gathered by the North Carolina SHPO. They closely resemble, in form, several North Carolina Georgian structures from the 1780s and 90s, but are considerably smaller and therefore are likely to be from the Federal period.

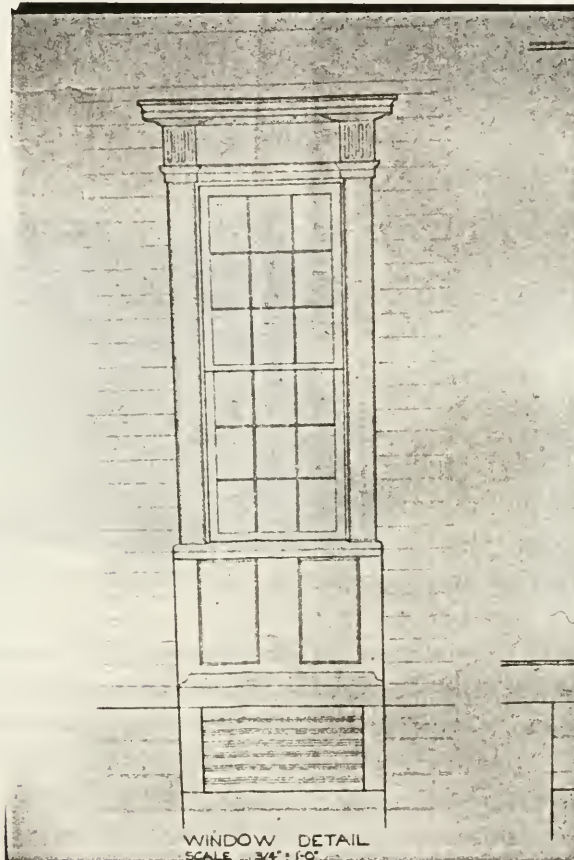


Figure 47: L. Scott Garner Detail of North Elevation First Floor Window

Matching the high style theme of the principal elevation first floor window surrounds are the modillions and molded components of the massive gable roof. The modillion blocks measure four by eight inches and are spaced about ten inches apart. In the appendix are two detail

drawings of these features, but the modillion profiles as shown are incorrect. Figure 48 shows the northwest corner of the main massing. As the modillions project from the building, there is a plain block that is interrupted by a fillet, then the profile curves upward in a quarter round configuration. The picture shows a cyma reversa molding below the modillions interrupted by a fillet. Also shown are a small rake board molding and corner boards, which have a roundel molding at the corner. The silhouettes of a dragon beam and projecting attic joists are visible to the right.



Figure 48: North Elevation; Trim Elements of Federal Main Gable

Most of the ornamental details of the main portico are missing, but two of the square columns are still in place. They are stylized versions of the Doric order, with pilasters superimposed on the inner and outer surfaces. Figure 49 shows one of the two surviving columns and Figure 50 shows the portico and part of the principal elevation as it appeared around 1940. From these two photographs, it can be seen that the portico resembles that of the main gable, but with scaled down components. The balusters are thick and may be original features. The portico ceiling is narrow tongue and groove and the flooring wide tongue and groove.

The Georgian section eave details consist of small dentils applied to wide boards. The rake and fascia boards are unmolded. The corner boards are narrower than those of the Federal main massing, but have beaded moldings at the corners. The dormers have narrow single architrave moldings and flush boards on the sides.



Figure 49: Detail of Main Portico Pier



Figure 50: Frances Benjamin Johnson Photograph of Principal Elevation (ca. 1940)

The Georgian section ornamental details and overall form are strikingly similar to the Bracken House, an eighteenth century dwelling in Williamsburg. The eaves details match, especially the pattern boards, which are nearly identical. The pattern board is shown in middle left of the next photograph. The dentils of the Georgian section are missing, but their small sizes were determined from ghost marks.



Figure 51: Pattern Board at Southeast Corner of Georgian Section

Both the Federal and Georgian roofs are clad in standing seam metal. The standing seams have double folds as seen on the main portico roof in the next photograph.

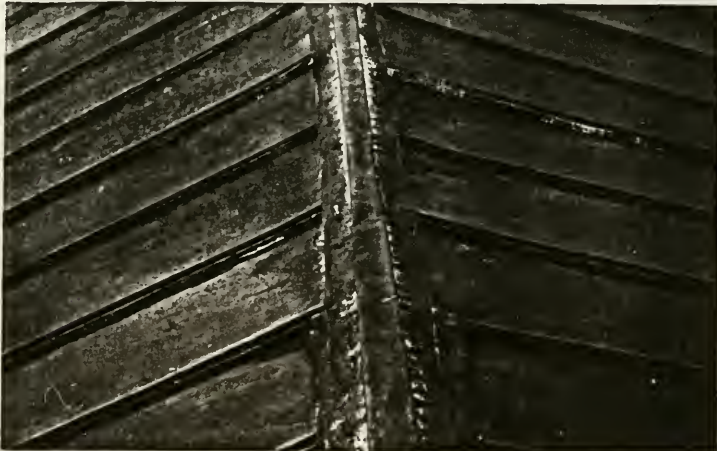


Figure 52: Main Portico Standing Seam Roof

The sheathing boards for the roofs of both sections are wide planks with one inch thicknesses, except in the cross hall, where the sheathing has been replaced with sheathing lath. Nail patterns in the sheathing indicate multiple campaigns of roofing. The next figure shows nails protruding from sheathing in the Georgian south chamber. A wrought nail with a spoon-tipped shank is seen in the lower middle part of the picture, with a cut nail above it. The sheathing of the Federal main roof has early cut nails with handmade heads. In both cases, the sheathing is likely original material.

In addition to these nails, there are modern wire nails of later campaigns, but oddly, no machine-headed cut nails or modern cut nails which one would expect to see for roofs installed in the middle and late nineteenth century.



Figure 53: Wrought and Cut Nails in Georgian South Chamber Roof Sheathing

In the process of removing roof sheathing boards from the cross hall, the carpenters decided to use old wood shingles as nailers for the purlins. Seen in Figure 54, the shingles are made of oak, are about five inches wide and a one-half inch thick at the exposed ends. The ends are

scalloped, a common feature of shingles in the eighteenth and early nineteenth centuries, designed to prevent warping. When these shingles were installed for roofing purposes is unknown, because of the absence of embedded historic nails. Wood shingles rarely last beyond forty years, but it is possible these were leftover from the original construction date and had fallen into the attic space. In the Federal section, scalloped pine shingles were discovered in the main gable roof structure but when they were originally used is also unknown.



Figure 54: Oak Roof Shingles in Cross Hall Attic Space

Interior Finishes and Ornamental Details

The primary wall finish is flat plaster applied over hand split lath. The lime plaster has the traditional three layers consisting of scratch coat, brown coat and high lime finish coat. The two base coats are reinforced with animal hair. There is no way to confirm if the existing plaster is original to the Georgian and Federal periods, but it seems likely because of the complete absence of circular sawn lath and the lack of evidence, such as fires or interior alterations which would warrant removal of old plaster. Under a 30x microscope, the author examined

four samples, from the Georgian hall and south chamber, the cross hall and Federal main hall. The samples differed markedly between the two periods. The Georgian layers were thicker and had higher percentages of aggregate and hair fibers. The Federal plaster had a higher lime content and finer particles, imparting a bright white color to the material even in the base coats. The visual analysis of the plaster was important in differentiating the Federal from the Georgian periods, but has little value otherwise. More extensive tests involving many samples could be performed, but even chemical tests for lime and gypsum may not provide any significant additional information. The author was surprised, however, to discover that there are few paint layers on the plaster samples from both sections. Paint analysis is beyond the scope of this investigation, but appears that many of surfaces may have their original finishes. Except for paint from vandals and oil based finishes for trim elements, repainting has been rarely performed. It is also possible that early distemper paints were removed, and/or layers of incompatible paints have completely flaked off due to the open and hostile environment.

A good example of this is provided by the Federal east parlor, the only room in the building other than the Georgian parlor with nonwhite paint on the plaster surfaces. Figure 55 shows the ceiling area at the northwest corner of the room. Part of the elaborately painted ceiling is still intact, but most of the paint has flaked off the wall surfaces. As will later be seen the Frances Benjamin Johnson photographs, the paint finishes in this room were the most elaborate in the building.



Figure 55: Paint Finishes in Federal East Parlor

Molded Plaster is found exclusively in the Federal section. It was employed for ceiling cornices, medallions, and possibly decorative arches. Its use was limited to the Federal parlors and main hall. Figure 56 shows a section of the hall ceiling cornice and Figure 57 shows the decorative arch recess at the southwest corner of the west parlor.

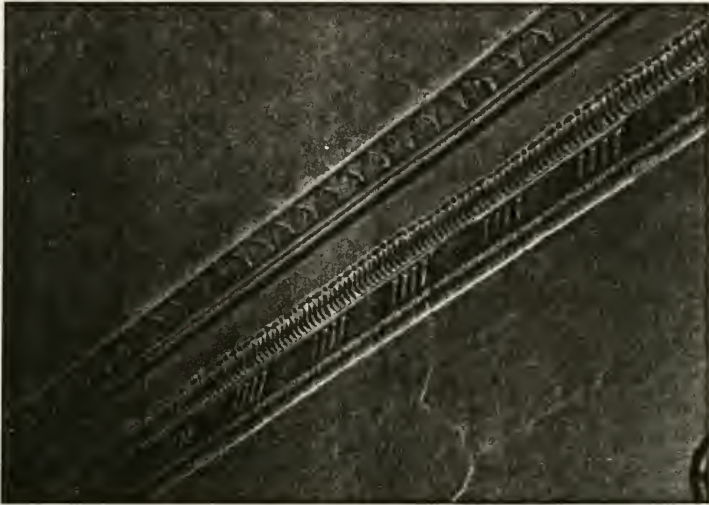


Figure 56: Federal Main Hall Ceiling Cornice Detail



Figure 57: Arch Detail of Recess in Federal West Parlor

Composition ornament, or compo, was used for the mantelpieces of the Federal parlor fireplaces and may have been used for the cross hall arch, door surrounds of the main hall and Federal parlors, and the decorative arches like that of Figure 57. Compo is a light to dark brown thermoplastic material consisting of chalk, resins, glue and linseed oil which can be used to create sculptural relief forms. It is a low cost alternative to wood carving, but when painted, cannot be easily differentiated from wood. The next six photographs, taken by Frances Benjamin Johnson in 1940, show the outstanding high style ornamental details of the Federal parlors and main hall. Note the panel details and locks of those openings with doors.

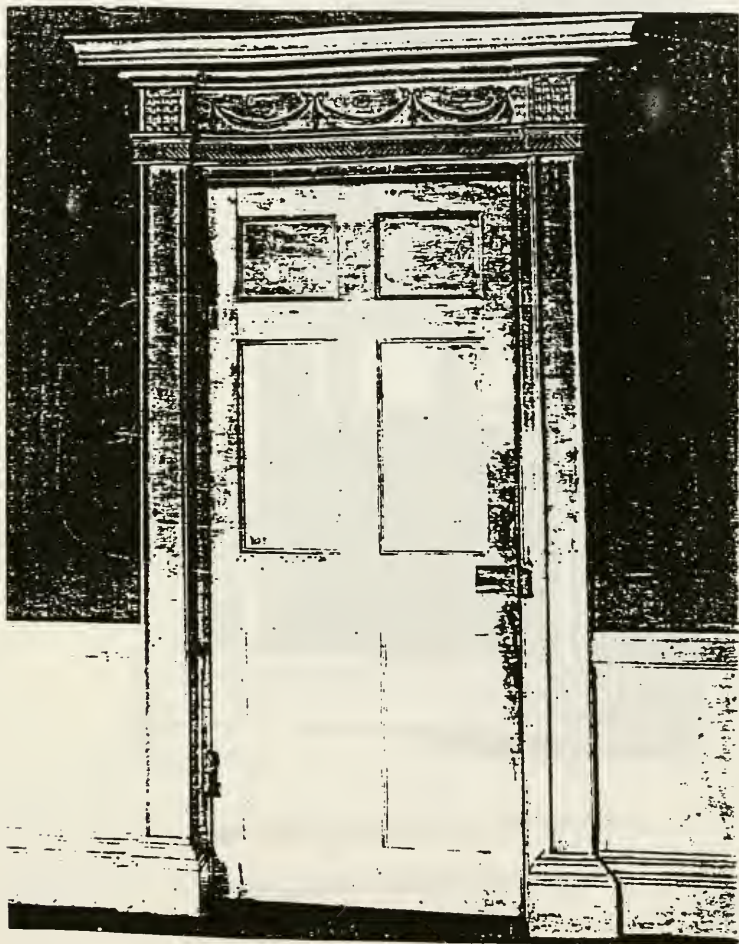


Figure 58: East Parlor Door into Main Hall
Photograph by Frances Benjamin Johnson, 1940

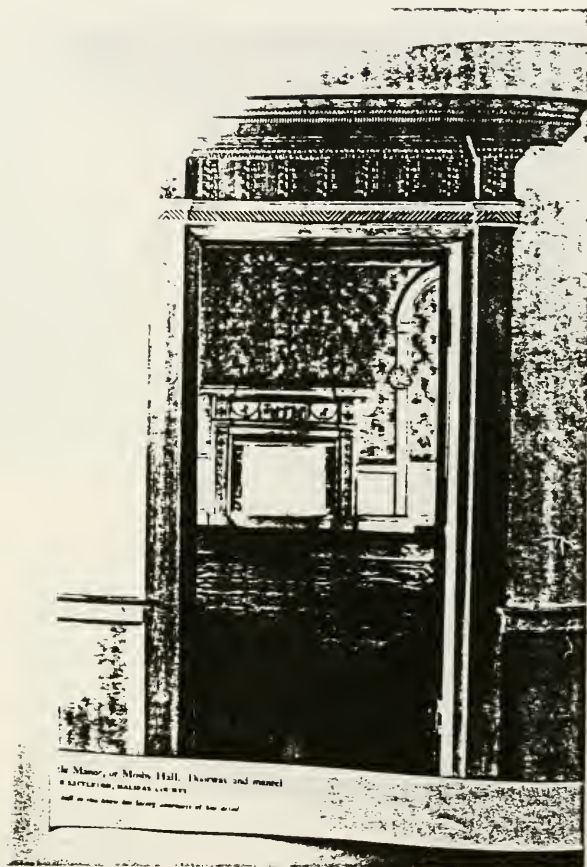


Figure 59: Main Hall Doorway into East Parlor

Photograph by Frances Benjamin Johnson
 Library of Congress

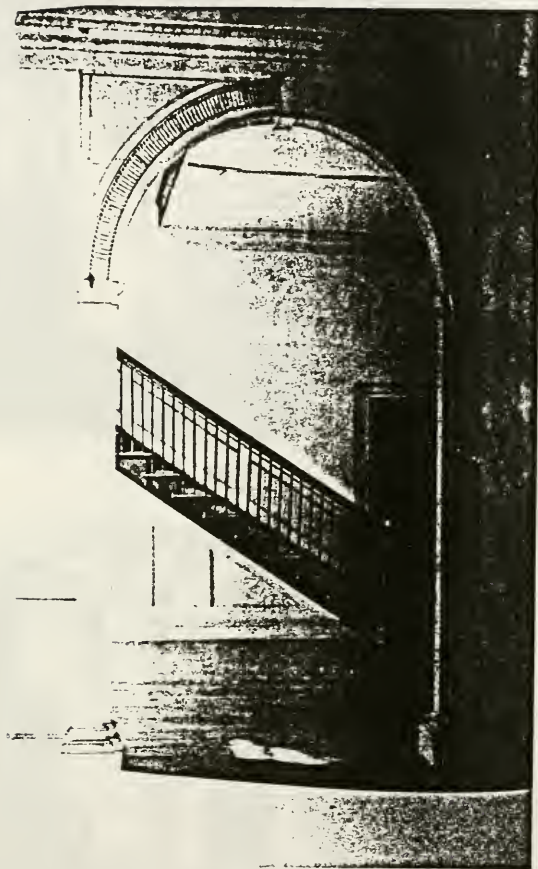


Figure 60: Arch Opening from Main Hall into Cross Hall

Photograph by Frances Benjamin Johnson, 1940

Library of Congress

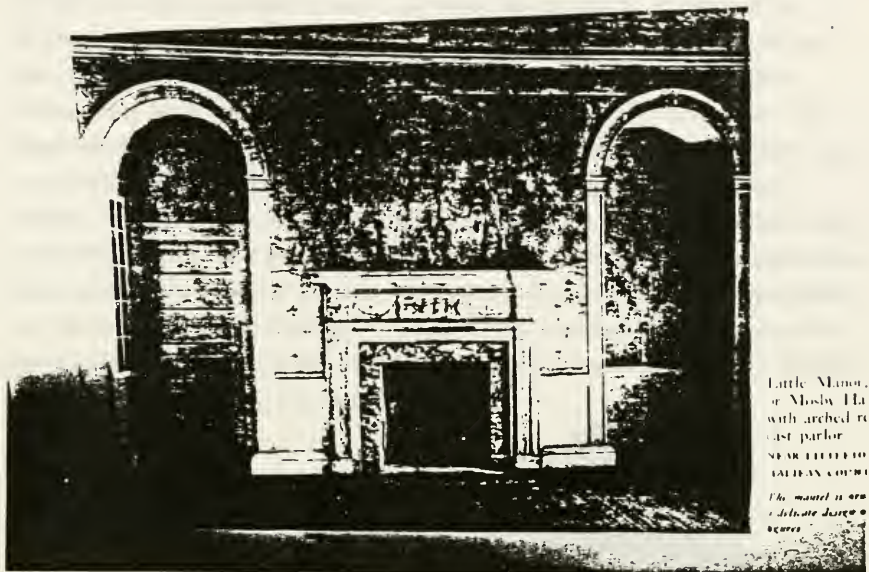


Figure 61: East Wall of East Parlor

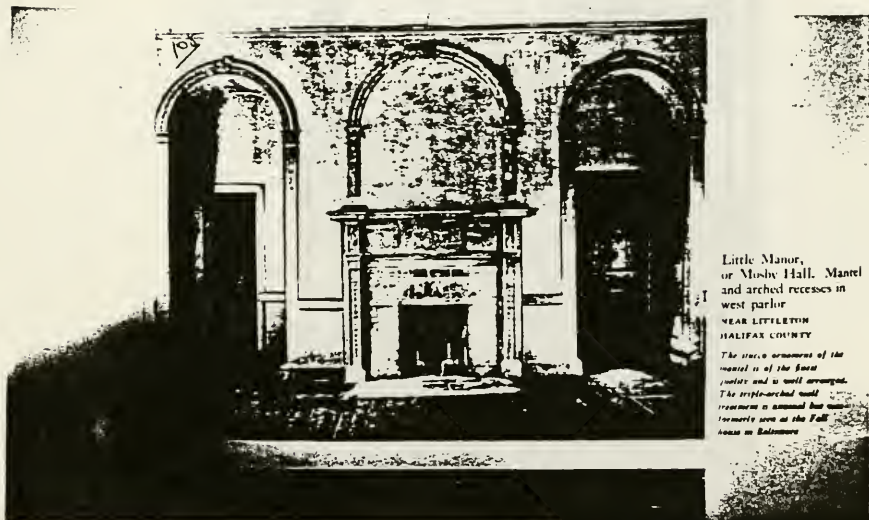


Figure 62: West Wall of West Parlor
Photographs by Frances Benjamin Johnson

Library of Congress

On the National Register form, the ornamental features of these spaces are described in detail, by architectural historians better versed on the subject than the author. A sample of this description is quoted here, in which historian Thomas Tilesen Waterman describes the west parlor fireplace surround and mantelpiece (Figure 63). It exemplifies the high artistry of craftsmanship, and its Edwardian language may also provide a source of amusement: "The pilaster panels have long pendants of diminishing husks, while the corresponding blocks above have reliefs of standing, draped figures. The center block is a magnificent scene, richly modeled, showing Phaeton, son of Helios, god of the sun, in a chariot drawn by leopards and followed by a throng. Over the leopards flies Eos, goddess of the dawn, and framing the upper part of the panel is a garland of blossoms, with pendants of leaves. The flanking frieze-panels have festoons and diminutive baskets of fruits and flower. In spite of the elaborate mantels of other houses (in the area), none can compare in design and richness with these two". The other mantel referred to is the east parlor fireplace.³

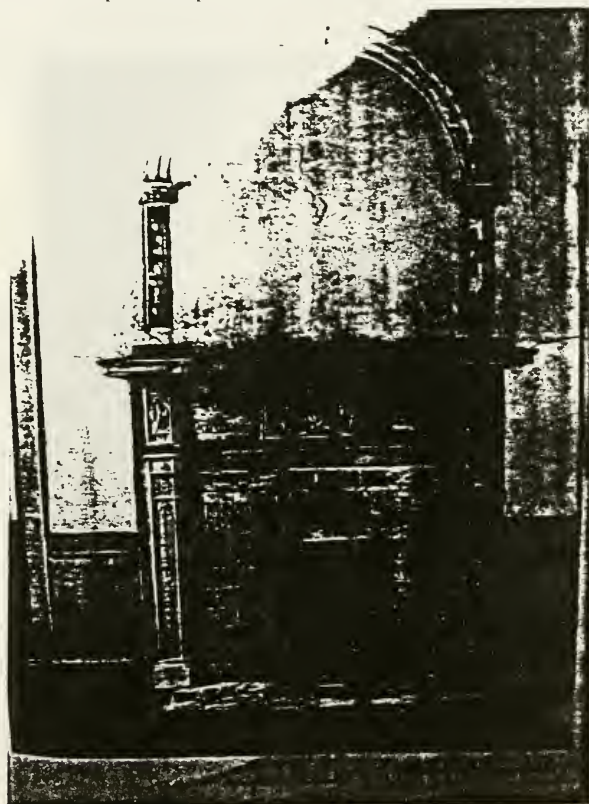


Figure 63: West Parlor Fireplace and Surround
Photograph by Frances Benjamin Johnson, 1940

Unfortunately, much of the plaster and compo ornament has been removed, damaged or destroyed. Except for sections of the ceiling cornices and window/recess arches of the parlors, the decorative features that survive in the Federal section are wooden trim elements: dado paneling, baseboards, and the cross hall door/window architraves and ceiling cornice.

These features reflect the hierarchy of ornament from primary to secondary spaces. The baseboard beneath the dado paneling in the Federal parlors consist of an elaborate base molding secured to a baseboard that projects about an inch from the dado panel. Seen in Figure 64, the profile of the molding, three inches long, has a cyma recta contour at the top, followed by cyma reversa, fillet and bead contours. Nailing blocks are used behind the five inch high baseboards to create a bas relief effect. Where the molding is cut, another molding returns away from the wall, forming a base for the pilaster-like doorcases as seen in the Johnson photographs.



Figure 64: East Parlor Baseboard Near Main Hall Door

In the Federal main hall, similar projecting bases are used for the doorcases, but the baseboards themselves do not project from the walls. The baseboards of the cross hall and Georgian hall and parlor are less elaborate than those in the Federal parlors. Seen in Figure 65, they are seven-and-a-half inches in height, and run flush with the doorcases.



Figure 65: Detail of Cross Hall Baseboard

As described earlier, the door and window architraves of the cross hall and Georgian hall and parlor have double architrave moldings. On the next page, Figure 66 shows a typical architrave of the Georgian and cross hall windows and doors. Figure 67 shows the typical architrave of the Georgian parlor windows and doors. Photographs of window/door architrave moldings and baseboards of the second floor rooms are in the appendix.

Sections of surviving dado panels are found in the cross hall and Georgian hall. Shown at the top of page sixty-one, the dado, rails, stiles and recessed panels are preassembled, then installed on the wall. They are designed to fit directly below the window sills with the baseboard installed over the lower rail. The Georgian parlor, the Federal wing chambers and all of the second floor rooms lack wainscot and instead have double beaded chair rails (Georgian) or chair rails with half round surbases (Federal).

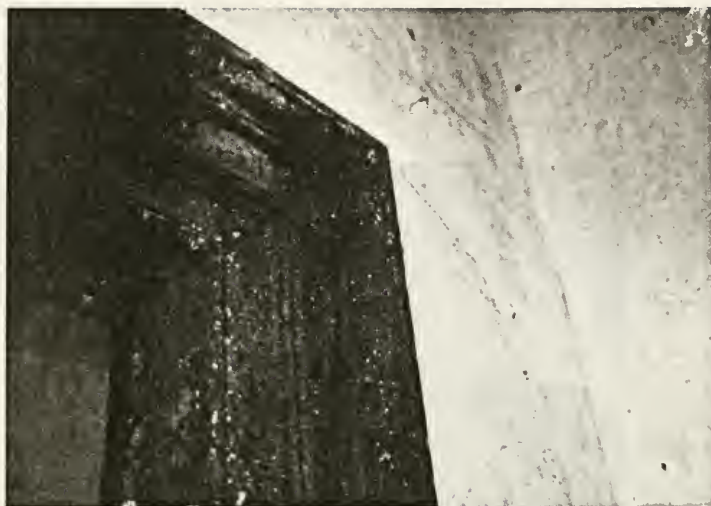


Figure 66: Door Architrave of Georgian Hall



Figure 67: Door Architrave of Georgian Parlor

This hierarchy of ornament also applies to ceiling cornices. Only the cross hall and Georgian hall have wooden cornices and all the other rooms in the building, except the Federal parlors and main hall, lack ceiling cornices altogether.



Figure 68: Dado Panel from Georgian Hall

The wooden ceiling cornices of the cross hall and Georgian hall are missing some of their components, but the dentils are still intact as seen in Figure 69. The cornice is eight inches in height and project about five inches into the room. They involve at least three separate applied pieces, to form the full profile.



Figure 69: Ceiling Cornice Detail of Georgian Hall

There are two layers of flooring that survive at Little Manor. The first layer appears to be original material, or at least is very early, being secured to the joists and beams with wrought nails (Georgian) or early cut nails (Federal). This layer averages about five inches in width, is one inch thick, and has joints of square tongues and grooves as seen in Figure 70.

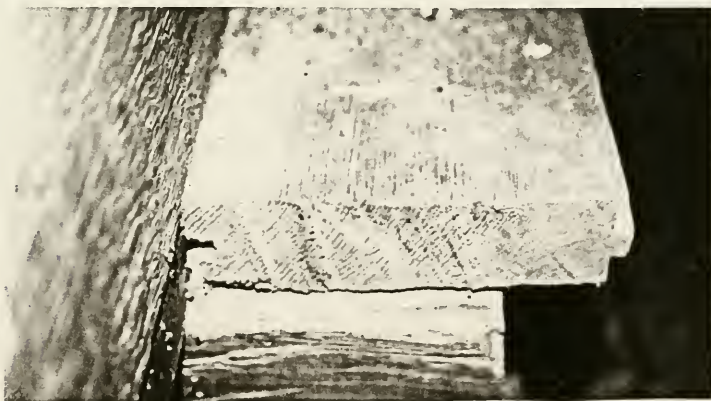


Figure 70: Original Flooring in Georgian Parlor

In several sections of the first floor of the building, particularly the cross hall/Georgian section, there is a second campaign of narrower strip flooring, but this was not extensively examined.

In concluding this chapter, it should be mentioned that there are several other features of the building which have not been described, the two sets of stairs being an example. Photographs of these and other features are in the appendix. In the case of cross hall stairs, so many of the decorative elements, such as rails, balusters and newel posts, were missing that a complete description was impossible. Several of these features are visible in the 1940 Johnson photograph (Figure 60), but they are too far in the background to describe in detail. Other features, such as the structural components supporting the Federal parlor fireplaces, are completely missing, and since there is no previous documentation of these elements, too much conjecture would be involved in describing them.

CHAPTER FOUR: BUILDING CHRONOLOGY

In the preceding chapter, the architectural elements of Little Manor were described as either "Georgian" or "Federal", but these reflect style more than do specific time frames. There is, for instance, a certain time lag involved where Georgian features common to the Tidewater region in the late eighteenth century are not adopted in parts of North Carolina until the early nineteenth century. Geography is an important consideration in determining the extent of this time lag. Little Manor is about seventy-five miles west, northwest of the early settlement of Edenton, located in Chowan County on Albemarle Sound, which flows into the Atlantic. Gaston Lake, just north of Little Manor, flows into the Roanoke River, which in turn flows into Albemarle Sound. River traffic from the Edenton area extended from Albemarle Sound to Roanoke Rapids, the fall line about twenty miles east of Little Manor. Hence, the cultural influences of the Virginia Tidewater region likely spread from southeastern Virginia, to Albemarle Sound, then westward toward Littleton. One can assume that these influences spread quickly to the Littleton area compared to other parts of the state, but this cannot be put into an exact time frame. For this reason, technological innovations, where manufacturing techniques known to have been developed within specific time frames, are of value in determining the building chronology of vernacular structures. In the case of Little Manor, it is the use of nails by manufacturing type that are of particular importance. Unlike stylistic elements, which are often based strictly on fashion or individual aesthetics, new nail technology spread rapidly. This will be demonstrated in the analysis of nails at Little Manor, where the original construction campaigns coincide closely with the introduction of certain nail types.

Nail Analysis

Determining building chronology based on nail manufacturing type is not an absolute dating method, but can be valuable when used in conjunction with other physical or documentary evidence. Based on a survey done on historic nails in Philadelphia by architectural historian Lee Nelson, the main manufacturing types are defined as follows:¹

Type I: Hand-wrought nails, produced from the 17th to 19th centuries

Type IIA: Early machine-cut nails with handmade heads, produced from 1790 to the mid 1820s.

Type IIB: Early machine-cut sprigs and brads with handmade heads (1790s to 1805).

Type IIC: Early machine-cut lath nails with handmade heads (1790 to 1810).

Type III: Completely machine-cut springs and brads. (1805-1820)

Type IV: Early machine-headed cut nails (1815 to 1830s).

Type V: Modern machine-cut nails (Late 1830s to present).

Type VI: Modern wire nails (1850s to present).²

In his survey report, Nelson states that the dates listed are approximations, and may be off in some cases by a few years.

The author has performed nail analysis on structures in New York State, Philadelphia, and Virginia in addition to seven structures in North Carolina and has found that, in most cases, Nelson's survey is accurate in the time frames of nail manufacturing types because they are corroborated by the documentary and/or physical evidence. It should be stressed, however, that nails can be used beyond the dates of their last manufacture. They can either be from unused inventories, or, on rarer occasions, be reused from other structures. At Little Manor, the author gathered nearly two hundred nails samples and examined hundreds more embedded nails that were not removed. The nails presented in the following photographs are representative of those used in each section of the building, but each section may also have other nail types employed during the later stages of the history of the building.

The dominant nail type used in the Georgian section of the building is the hand wrought nail. Shown in Figure 71, these nails were used for framing elements, weatherboard, exterior trim, second floor interior trim, and flooring. These are represented by labels A, B, C, and G.

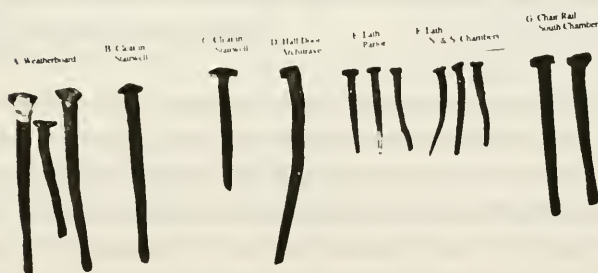


Figure 71: Representative Nail Types of Georgian Section

All of these Type I nails are two to three inches in length, have spoon-shaped shanks at the ends and have either T-shaped or rose-shaped heads. Of the non-lath nails partially or completely accessible for visual examination, approximately 85% were of the hand wrought variety. The other 15% were completely machine-cut brads used exclusively for first floor interior trim elements. Brads are defined in the eighteenth century as non-framing nails over two inches long, whereas sprigs are nails under two inches, such as lath nails. By the early nineteenth century, brads referred to any non-framing nail. In Figure 71, the completely machine-cut brad is represented by label D. Since this is a Type III nail, produced from 1805 to 1820, it indicates that the trim elements of the first floor of the Georgian section are contemporaneous with the construction of the Federal section, sometime after 1804, the date the estate was transferred to William Person Little.

In terms of chronology, the most interesting nails are the lath nails used in the Georgian section. The lath nails shown as labels E and F in Figure 71 are either Type IIC or Type IV, (early machine-cut nails with handmade heads and early machine-headed cut nails). Most of these are Type IIC nails, produced from 1790 to 1810. This indicates that the lath and plaster in the Georgian section was installed several years after the original construction date of 1781, the time the property was transferred to Thomas Person. It could also indicate that the Georgian section was built in the 1790s. In the deed and will research literature, it is constantly assumed that individuals would immediately build on their newly acquired properties, but there is no actual evidence to support this. Person may have decided to build the structure many years after inheriting the property, bearing in mind he already had a residence in Granville County. In regard to the existence of Type IV nails (1815 to 1830), it is likely they were used for minor alterations or repairs. The absence of completely hand forged nails for lath continues to surprise the author despite the theory just put forward. In the analysis of nails of Little Manor, this is one area that needs further investigation. It does, however, indicate that technology transferred quickly to Little Manor from the more heavily populated coastal settlements.

The only other possible theories are that the Georgian section was built by Person's sister, Mary Ann Person Little, during her ownership between 1800 and 1804, or even by her son, William Person Little. William Little may have built the Georgian section before the Federal section. In addition to nail analysis, investigation into the construction of Georgian style structures with steeply pitched roofs built between 1780 and 1810 might provide answers to these problems. The author currently leans toward the theory that the Georgian section was built sometime in the 1780s or 90s because of the lack of non-lath early machine-cut nails

with handmade heads in the Georgian section. If the technology for lath cut nails was present, certainly they would have used Type IIA nails for framing elements. The Type IIC nails most likely mean the building had a second campaign of lath and plaster. Further examination of nail patterns on the interior framing elements should confirm this.

Analysis of nails in the other sections of the building are less complicated. In the Federal main massing, the nails used in the weatherboard and roof frame are Type IIA nails, early machine-cut nails with handmade heads. Shown under labels I and J (the two to the right) in Figure 72, they were produced between 1790 and the mid-1820s, which fits the time frame of the construction of the main massing sometime after 1804.

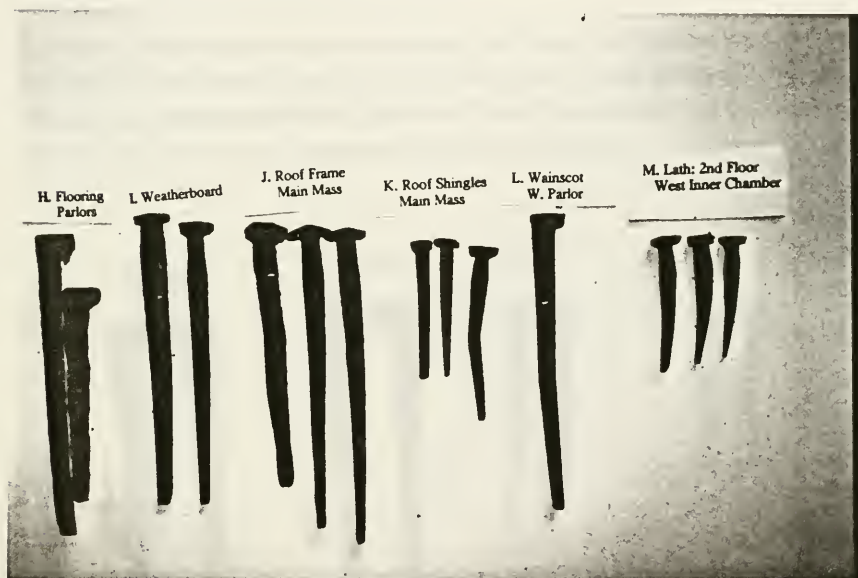


Figure 72: Nails of Federal Main Massing

Approximately 80% of the framing nails examined in the Federal main massing are of the Type IIA variety. The other 20% are wrought nails used for clinching purposes in braces (Label J, on the left) and some of the small framing members. For roof shingles, sheathing boards, and lath, the nails used were Type IIA and Type IIC. Type IIC nails were manufactured until 1810, so this is compelling evidence that William Person Little built the

Federal section sometime between 1804 and 1810. As stated earlier, however, these dates are for Philadelphia, so production and/or use of these nails may have occurred shortly after 1810. It should also be noted that the Federal main massing lacks any Type IV nails, early machine-headed cut nails, produced in Philadelphia between 1815 and the 1830s. This would indicate the Federal main massing was built sometime between 1804 and 1815, or shortly thereafter.

The fourth main nail type in the Federal main massing is Type III, completely machine-cut brads, produced between 1805 and 1820. These nails match the trim nails used in the Georgian section and are seen under label L in Figure 72. The flooring nails of the main massing are identical to the trim nails and are seen under label H. They appear slightly oversized because of their corroded condition.

Nails taken from the cross hall area match those of the Federal main massing, which indicates the cross hall was built at the same time as the main massing. Shown in Figure 73, they are Type III nails (labels N and O) and Type IIA and Type IIC nails (labels P and Q). The Type III nails are used in all first floor sections of the building.

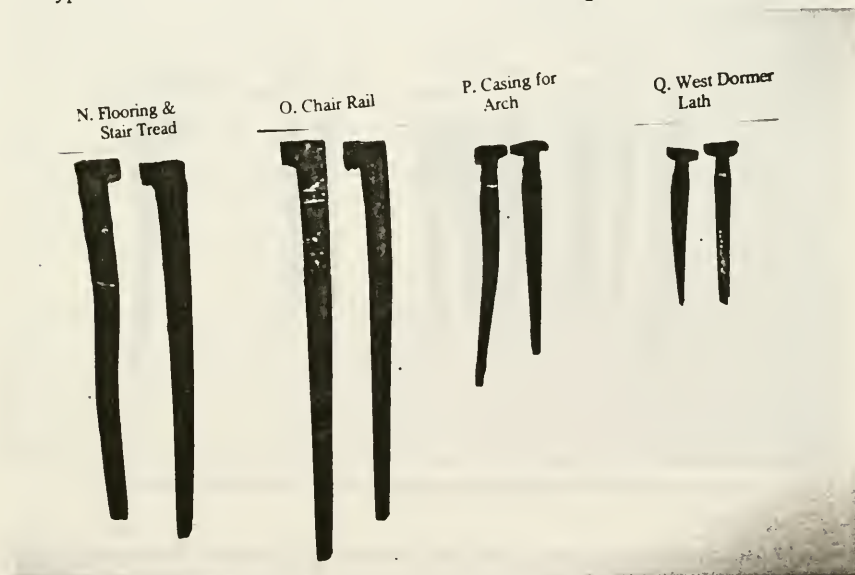


Figure 73: Nail Samples From Cross Hall

From the ceiling joists down to the foundation, the Federal wing chambers have identical nails

to those used in the Federal main massing. The roof structures of the wing chambers, however, are primarily built of Type IV nails, early machine-headed cut nails produced between 1815 and 1830. It appears that the current side gable roofs of the wing rooms represent a second campaign of construction, based on nails and several other pieces of evidence which will be discussed later.

All of the porches other than that of the Federal main portico are in a state of collapse, but sections of these structures are still intact, lying on the ground. About 75% of the surviving nails of the framing elements and weatherboard for the fallen porches off the south elevation of the Federal section and east/west elevations of the Georgian section are built with Type IV nails and there are no earlier cut nails. It is likely that these porches and the Federal wing chamber roofs were constructed at some point after the introduction date of these nails after 1815. A few of these nails are shown in Figure 74.

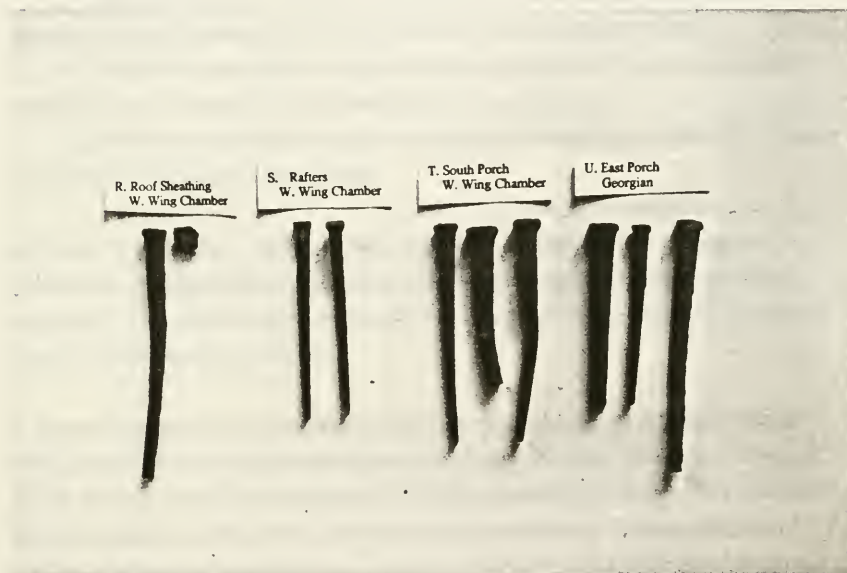


Figure 74: Nails of Rear Porch Structures and Federal West Chamber Roof

Type IV nails are the one nail type which the author believes Nelson's time frames for their production are inaccurate. The author has seen nails of this type used as the primary fastener in building's known to have been constructed in the 1840s and early 1850s and he has seen this in more than one region of the country. It is doubtful that all of these machine-headed cut

nails were all from unused inventories. It is more likely that the production dates of these nails span from 1815 to the 1850s, instead of 1815 to the 1830s. In view of this, the rear porch structures and Federal wing chamber roofs at Little Manor were probably constructed between 1815 and the early 1850s.

To summarize, the nail analysis at Little Manor provides the following information in regard to the building chronology of Little Manor:

1. The Georgian section was built before 1790, the date of the introduction of cut nails. This is based on the high percentage of wrought nails and the complete absence of cut nails used for framing elements.

2. The cross hall, Federal main massing and non-roof framing elements of the Federal wing chambers were built after 1790, because the main framing fastener was the Type IIA nail, the earliest cut nail produced.

3. The surviving lath and plaster in the Georgian section was installed after 1790, because of the high percentage of Type IIC cut nails used as fasteners for lath.

4. The trim elements of the Georgian first floor and all of the Federal section were installed after 1805, the date of the introduction of Type III nails.

5. The Federal wing chambers roofs and rear porch structures were built after 1815, the date of the introduction of Type IV nails.

In the case of Little Manor, nail analysis is particularly valuable because the original construction campaigns happen to coincide with the introduction of nail manufacturing techniques. It also provides clues to alterations performed on the building which cannot be found in the documentary evidence.

In general, nail analysis is an important dating tool for structures built between 1790 and 1890, the latter being the approximate date when wire nails became dominant. During this period, there are at least five manufacturing techniques introduced. Within each technique, there are variations which can narrow the time frames even more. Unfortunately, few scholarly surveys have been performed on nails, particularly in North Carolina. More nail surveys of historic buildings whose construction dates have been verified could be of great value in analyzing structures with no surviving documentary evidence. In regard to Little Manor, the author performed only limited visual analysis and feels more extensive investigation is needed. Important additional information could be obtained if more nail samples were gathered and microscopic examination of nails sections performed.

Molding Profiles

In addition to nails, molding profiles are valuable evidence in determining building chronology. They are less reliable as dating tools, because they reflect style, but nonetheless can provide important information when used with other evidence. Of seven profiles taken, three were deemed good enough for presentation purposes. Accuracy in obtaining profiles is a tricky process, because of interfering paint layers and the limitations imposed by the size of the keys of the metal profile gauge. In the three profiles shown in Figure 75, the details of the band moldings at the top of each profile are the most accurate.

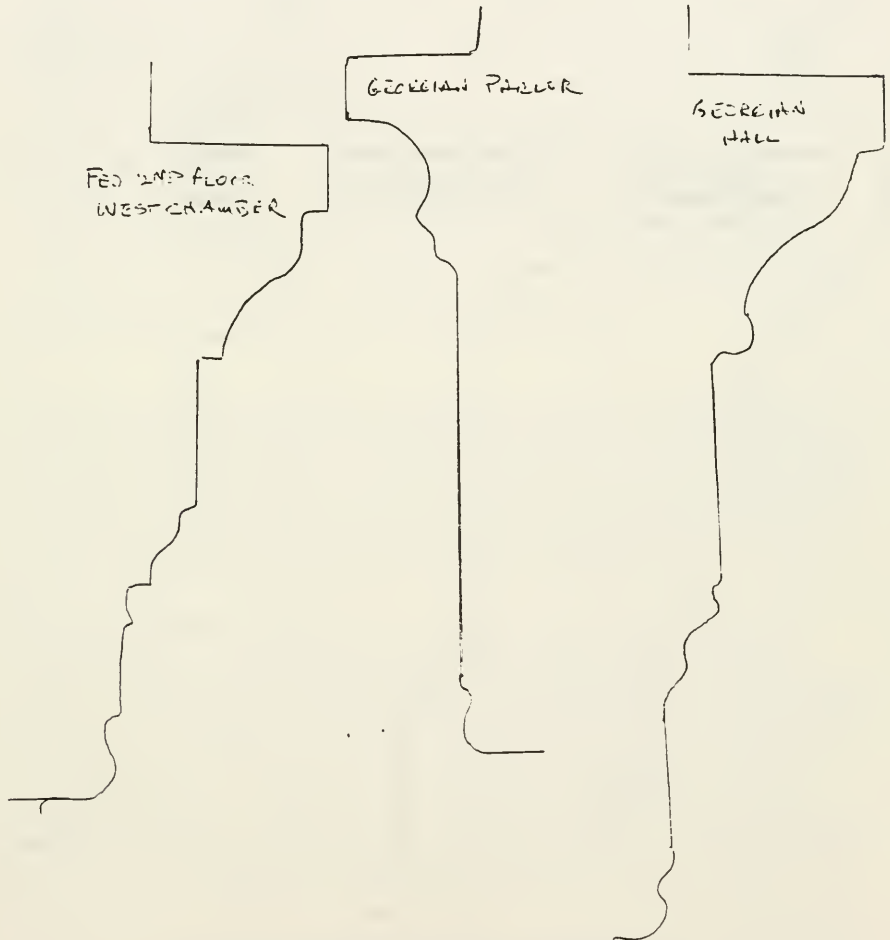


Figure 75: Molding Profiles of Little Manor

Within rooms, the profiles match from one door surround to another, but no two profiles match when comparing one structure to another. Figure 76 show several profiles obtained by the North Carolina SHPO of other structures in North Carolina.

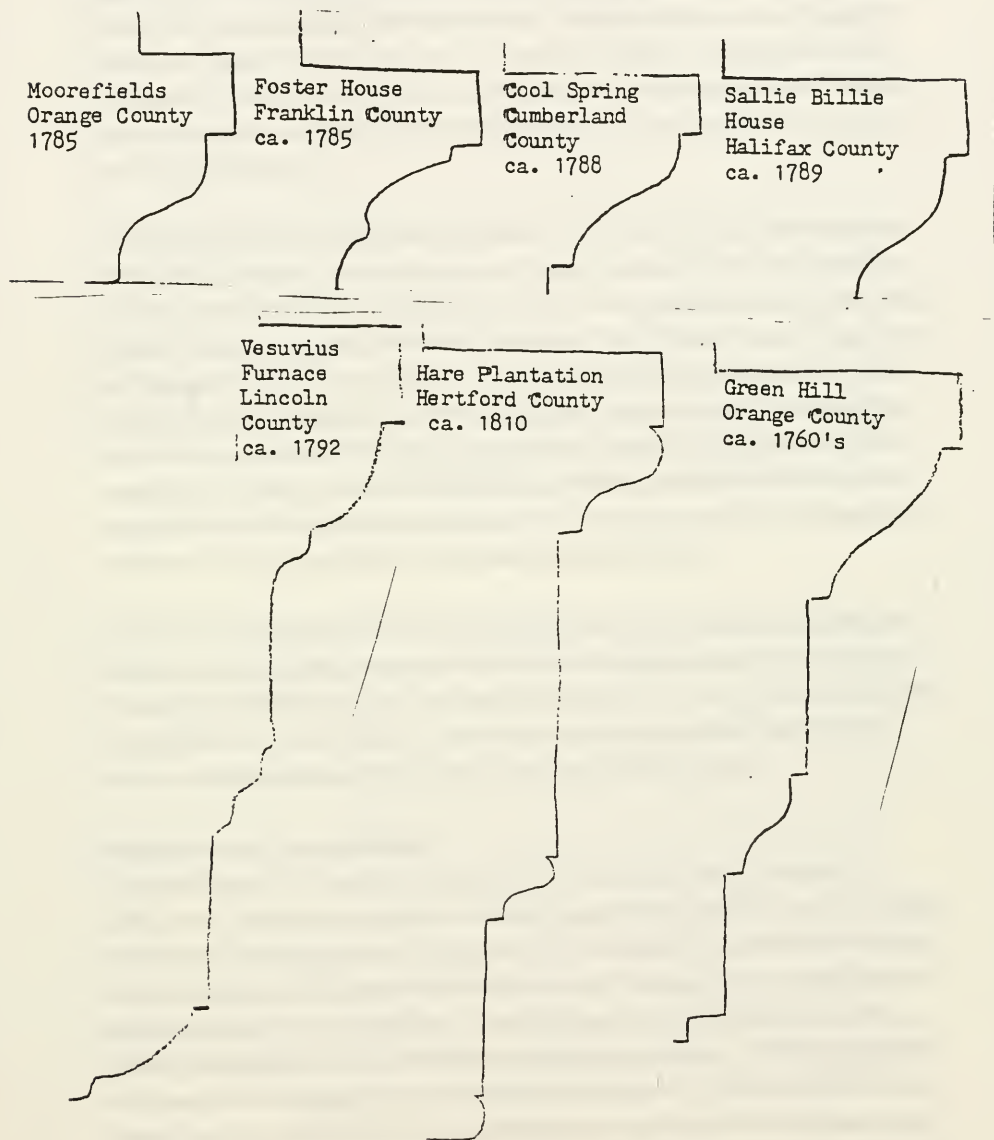


Figure 76: Molding Profiles of North Carolina Dwellings

The Georgian section hall and Federal second floor west chamber door profiles closely resemble other structures built between 1771 and 1798 in the contours of the band moldings. After 1798, the band moldings differ dramatically. Of particular interest is the comparison between the Federal chamber profile and the Georgian hall profile. They are quite similar, although the Federal chamber profile is scaled down. The Georgian parlor profile is unique in that has cavetto contour below the top fillet rather than the cyma reversa molding common to most of the other profiles.

Unfortunately, no profiles of structures built between 1800 and 1810 were obtained by the SHPO survey, and this is a critical time period. It does demonstrate, however, that stylistic elements are not necessary a function of time as proven by the Federal chamber profile being somewhat similar to the Green Hill House, built in the 1760s. The fact that the Georgian hall profile is similar to the moldings of the 1771 to 1798 time frame suggests that the Georgian hall profile may be contemporaneous with the original construction of the Georgian section. In the plaster and nail analysis of the Georgian section, however, it was determined that the current plaster campaign was not contemporaneous with the construction of the Georgian section structure. One possibility in explaining this is that the doorcases in the Georgian hall were reused after the installation of the second campaign of plaster.

The main conclusion drawn from the molding profile analysis is that historic doorcase and window surround moldings can change little within the Georgian and early Federal periods. The profiles of the SHPO survey of structures built after 1810 do show a dramatic change and this suggests that the trim elements of the Federal section were installed before this date. Surveys of profiles between 1800 and 1810 may provide additional clues.

Alterations in the Georgian Section

Although changes in the interior finishes of the Georgian section can be interpreted in different ways depending on the type of finishing material being analyzed, this does not apply for changes in framing elements. In Chapter Two, the changes in door and window openings of the Georgian/cross hall section were briefly discussed. Analysis of the framing elements provide additional clues as to what the original configuration of the windows and doors looked like during the original construction campaign of this section. The framing elements of the east and west elevations of the Georgian/cross hall section are shown in Figure 77 on the next page. On the first floor, each elevation has four openings and the openings line up from east to west. As viewed in the elevation drawings, those openings seen on the left of the east elevation line up with the openings on the right of the west elevation. Beginning with the

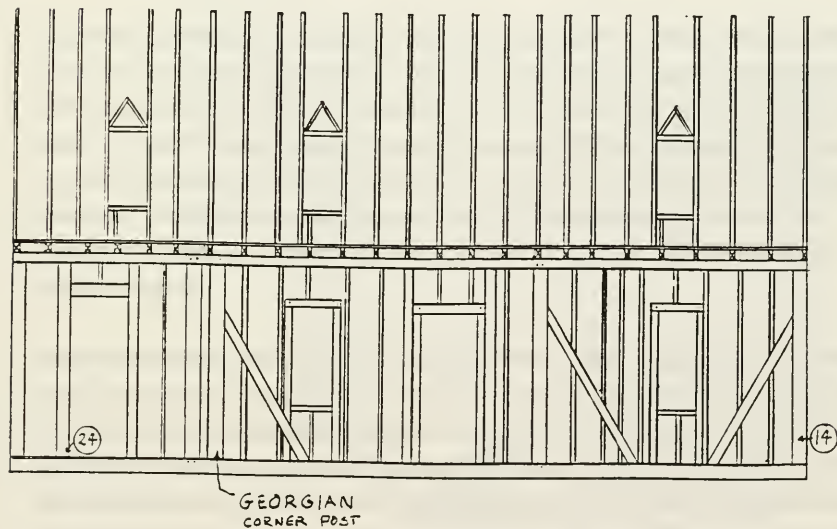
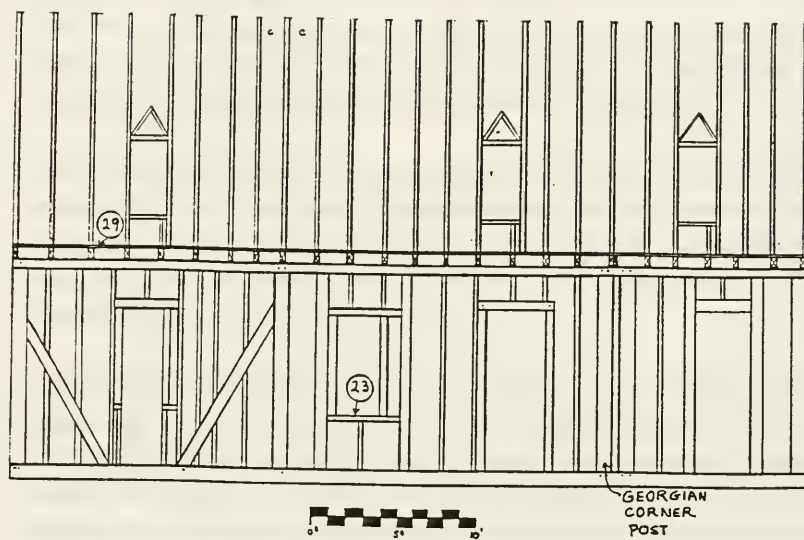


Figure 77: East (top) and West (bottom) Elevations of Georgian/Cross Hall Section

far left of the east elevation, it can be seen that the opening was converted from a window to a door. The surviving framing elements of a window match the framing elements of the opening on the other side, seen at the far right of the west elevation. Hence, the original openings of this room consisted of two windows, typical of a Georgian parlor.

The second opening from the left in the east elevation shows a window. This was originally a door opening as seen by the unusual placement of the secondary studs between the full length primary studs. Its corresponding opening on the west elevation is the second void from the right. This shows an original door frame. Hence, there were originally matching doors on this east/west axis.

The third opening from the left on the east elevation shows a door. Note the lack of full length primary studs used for the door and the odd configuration of elements. This opening was originally a window that matched the window on the other side, as seen in the third opening from the right on the west elevation. The last openings, seen on the far right on the east elevation and far left on the west elevation, are matching door frames of the Federal cross hall. The separation of the cross hall from the Georgian section is marked by the original Georgian corner posts, now acting as posts for the partition wall.

The framing elements of the Georgian section show the original use of the east/west openings. If the cross hall addition is removed, the classic Georgian plan is in place: a central door of the hall flanked by two windows. One window serves the large hall and one serves the smaller parlor. As seen in the molding profiles, the hall has more elaborate moldings, and if original, is typical of the hall/parlor scenario, where the public space of the hall has the more high style ornament. It is likely the changes that took place in the Georgian section occurred early, perhaps at the same time the Federal section was built. This is based on both nails and framing elements.

Early alterations were also performed on the second floor of the Georgian section. As seen in both Georgian section elevations, the dormers do not directly line up with the openings below. This is because the carpenters were restricted by the roof frame already in place. They had to cut through one rafter as seen below the sills of the dormers, then installed a companion rafter for structural support. Figures 78 and 79 illustrate this process. Figure 78 shows the original rafter (on the left) cut to make way for the dormer structure. Figure 79 shows a wind brace cut for the same reason, seen on the middle left. Ordinarily, the wind brace would end at the rafter with a half lap joint cut into the rafter rather than the brace being completely sawed off.

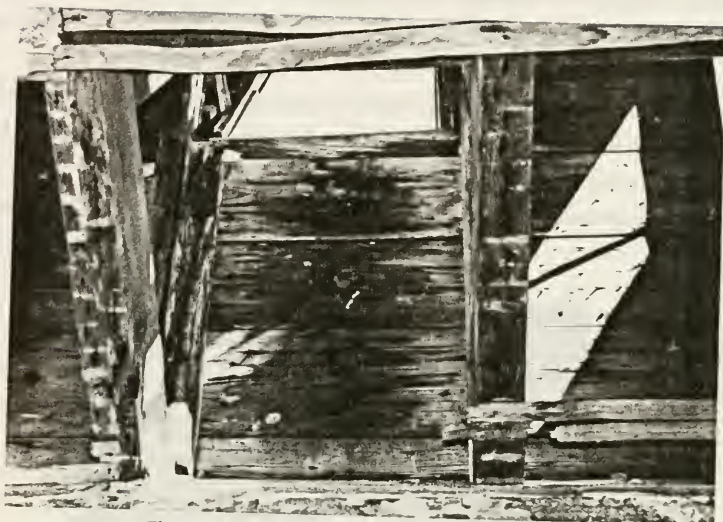


Figure 78: Georgian Dormer Frame Elements



Figure 79: Wind Brace in Georgian Dormer Frame

When the dormers were installed could not be ascertained, but it likely it occurred before the construction of the Federal section because of the lack of Type IIA cut nails in the framing elements. The occupants may have lived on the first floor, then decided to expand into the half story space.

A final alteration in the Georgian parlor occurred late in the building's history. Shown in Figure 80, a door was sided over with weatherboard at the southwest corner of the Georgian south elevation. This door is shown in the L. Scott Garner floor plans of 1964 and was covered at some point afterward. The frame inside is still intact and matches the other jambs in the Georgian/cross hall section.



Figure 80: Covered Doorway on Georgian South Elevation

The date when this doorway was covered is a mystery. In the Garner plans, the door is shown, but is covered in a 1925 photograph seen in Figure 84.

Federal Section Alterations and the Rotated Roof Theory

Unlike the Georgian/cross hall section, the Federal main massing has undergone almost no changes. There is no evidence of changes in openings and interior partitions. The only anomaly is the ghost mark of a semicircular fanlight centered on the base of the massive gable on the north elevation. Shown in Figure 81 (middle), its existence is a complete mystery, as there is no evidence of corresponding framing elements on the interior.

The most significant early alteration that occurred at Little Manor, and one that impacts the architectural history of tripartite North Carolina structures, occurred with changes to the Federal wing chamber roofs. In 1998, restoration contractor Dean Ruedrich, with Mitch Wilds, discovered the ghost marks of front gable roofs on the chimneys near the wing chambers. Shown in Figure 82, the mark of a twenty-five degree gable roof is clearly visible.



Figure 82: Ghost Mark of Front Gable Roof on South Elevation of Federal East Chimney

Ruedrich and Wilds theorized that the original front gable roofs were at some point rotated ninety degrees to give the roof structures their current side gable configuration. The thesis investigation confirms this theory. It begins with a major design flaw during the original Federal construction campaign. The builders were trying to create a tripartite principal elevation with three matching ornamented small front gables beneath one large main front gable. The front gables of the wing rooms were designed to be the same height, roof pitch

and approximate width of the main portico as seen in Figure 83. This would provide an elegant and unique symmetry to the structure lacking in all other North Carolina tripartite structures.

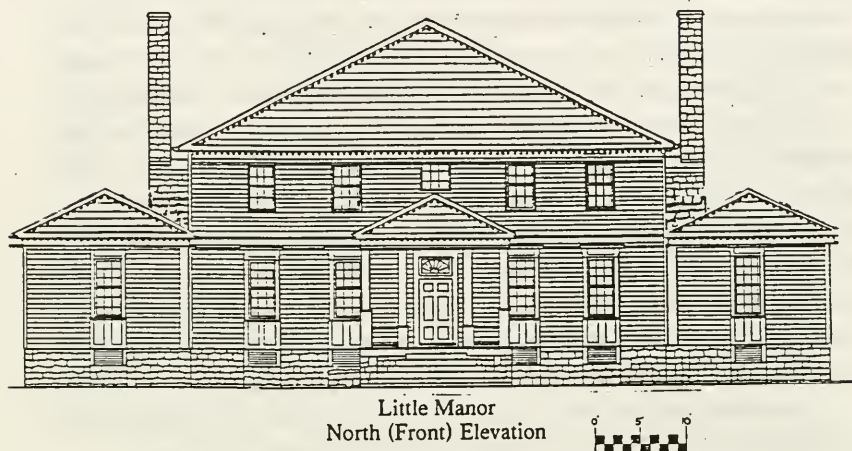


Figure 83: Original Design of Federal North Elevation

Although visually pleasing, the problem with the design is that during rain storms heads of water rush down the roof surfaces of the gables directly onto the chimney and weatherboard of the side elevations of the main massing. Unless very large valley gutters or wide metal flashing materials are used, there is no way the water is prevented from splashing onto the weatherboard and into its overlapping seams. Heads of water can also penetrate into the mortar joints of the chimneys. The result is that these vulnerable areas began to deteriorate rapidly, and the owners were forced to solve the problem by rotating the roof structure to its current form so the flow of water ran off the eaves down onto the ground or into a gutter.

In addition to the chimney ghost marks, there are five other additional pieces of evidence which support this theory:

1. Aside from the rear porches, the Federal wing chamber roof structures are the only parts of the Federal section that use Type IV nails for sheathing boards, roof shingles and framing elements. Since these nails were introduced in 1815, it is likely the roofs were rotated

within a ten to fifteen year period from the date of the original Federal construction campaign, because the design flaw of the front gable roofs would not have allowed their survival for a long period of time.

2. The half lap joints of the rafter pairs near the ridge of the wing roofs are very uneven and were hacked on most of the pairs to make the joints work.

3. The joists in the attic spaces of the wing chambers employ the same system as the front portico: a series of joists running on an east/west axis with small outriggers running perpendicular to the joists, acting as nailers for the cornices on the north and south elevations. In the side gable configuration of the wing chambers, the rafters run perpendicular to the joists, not parallel to them as seen in the portico roof. The triangular truss system of the portico roof is a more typical design of the period and is stronger in tension and compression.

4. Using a laser level, it was determined that the ridge of the west chamber roof is about six inches lower than that of the portico roof. Currently, the rafters of the west chamber span a little over sixteen feet, on a north/south axis. In the original front gable configuration, the rafters had to span eighteen feet on a east/west axis. If the roof pitch is twenty-five degrees in both situations, the ridge of the front gable roof of the west chamber would be about six inches higher when spanning eighteen feet, matching the ridge line of the main portico. This takes into consideration that there has been little differential settlement of the foundation.

5. Analysis of framing elements of the east and west elevations of the Federal main massing indicate there were second story windows near the northwest and northeast corners. These windows were covered up in order to install the side gable roofs. In the original front gable configuration, there was plenty of space for the windows. The framing elements of these windows are seen in the appendix.

Because of the gable ghost marks on the chimneys and the additional five types of evidence, it is apparent that all of the roof structures of the Federal north elevation at one time had front gable roofs. What is not known is whether the front gables of the wing chambers had the same applied ornament as the main and portico gables.

Later Alterations

In the analysis of nails, it was determined that the porch structures on the rear of the building were constructed sometime between 1815 and the 1850s. Two of these are seen in Figure 84, which shows a view of Little Manor taken from the southeast in 1925, during a fox hunt. One porch kicks out from the Georgian roof in the center of the photograph and the other projects from underneath the eaves of the Federal east wing chamber roof. The fact that the wing porch is not a continuation of the main wing roof indicates it was probably built

separately, sometime after the wing side gable roof. All of the roofs in the photograph have wood shingles with square butt ends, likely the roofing material before the installation of the standing seam metal roof. Wooden shutters are visible on some of the windows and there is an outbuilding to the far left.

Glimpses Of Yesteryear

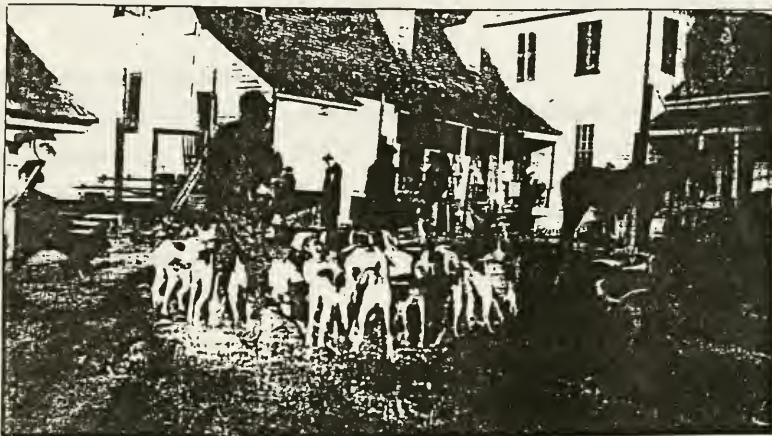


Figure 84: 1925 Photograph of Little Manor

The only other alterations that are known to have occurred after 1925, are the installation of the small bathroom off the south elevation of the Federal wing room and galvanized sheetmetal gutters which have fallen off the building.

In terms of modern electrical and mechanical systems, the only evidence of these that survive are early campaigns of surface mounted wiring. Some of the wiring was open knob and tube and some encased in wooden moldings. No other modern updates survive in the building, including plumbing and heating systems. It appears few alterations occurred in the last seventy years of the building's history.

The analysis of the physical evidence of the building, particularly the framing system and nails, tells a great deal about the history of alterations in the building which no other evidence can provide. At Little Manor, there are also no major inconsistencies in comparing the documentary evidence with the physical evidence.

CHAPTER FIVE: BUILDING CONSERVATION

Because Little Manor is in the advanced stage of deterioration, the pressing issue is the building's stabilization. A full blown restoration of the building would easily cost in excess of a million dollars and really cannot be considered until an adaptive use for the structure can be determined. In the previous chapters, a great deal of the damage to the fabric has already been seen, so this chapter will concentrate only on the major themes regarding deterioration processes.

Deterioration Processes and Condition Assessment

The main causes of deterioration to Little Manor are water penetration, brown rot fungi and most of all, human neglect. Beginning with the foundation, there are two main issues, loss of fabric and flooding. Foundation loss is greatest in the Georgian/cross hall section. Shown in Figure 85, taken from the southeast, all of the foundation has collapsed at the southeast corner. A similar situation has occurred on the west elevation where the cross hall meets the Federal main massing.



Figure 85: Loss of Fabric at Southeast Corner of Georgian/cross hall Section

Although the basement the Federal main massing is fairly dry, the basement spaces beneath the Georgian hall and parlor are in a constant flooded condition, being the lowest areas below grade. Seen in Figure 86, under the Georgian parlor, there is one to two feet of stagnant water.



Figure 86: Flooded Basement under Georgian Parlor

The next three figures show the overall damage to the building's horizontal envelope. Figure 86 shows the Federal north elevation. The east chamber is gone, square columns and foundation elements of the portico are missing, there are holes in the weatherboard and no protection over the window and door openings.



Figure 87: North Elevation Damage

Loss of weatherboard and lack of protection over door and window openings on the east and south elevations of the Georgian/cross hall section were seen in Figure 85. Damage to the west elevation of this section is seen in Figure 88. The cross hall door visible above the pile of rotted porch wood is in particularly bad condition, with the west sill and foundation in a state of collapse. The door is literally hanging in mid air. a common theme throughout the building.



Figure 88: Damage to West Elevation of Georgian/cross hall section

The Federal west chamber has missing siding, but more severe damage has occurred on the second floor of the east elevation Federal main massing, with large holes in the envelope as seen in Figure 89.



Figure 89: Damage to Federal West Elevation

Damage to the east elevation of the Federal main massing is even worse. Figure 90 shows gaping holes in the main massing and large sections of missing roof. Only the chimney and firebox survive from the Federal east wing chamber.



Figure 90: Damage to East Elevation of Federal Main Massing

Most of the damage to the exterior walls and interior areas of the Federal section are due to the collapse of large sections of the standing seam metal roof of the massive front gable. The damage occurred where the roof meets the eaves of the east and west elevations. Damage to the metal roof, which was poorly constructed to begin, was the result of water penetration from rainfall and falling branches of nearby trees. Once the roof membrane was pierced, water penetrated into the wooden structural members, providing a perfect moist environment for brown rot fungi. The hypha of the fungi spread quickly, rotting out the rafters, joists, posts, plates, studs and braces. A domino effect then occurred from the rotted roof areas to the foundation. The weight of the collapsing roof members caused buckling of the second floor ceilings. The structural members and plaster then fell onto the floor, and their weight, coupled with continued brown rot attack, forced the collapse of the second floor. This process continued all the way

down to the summer beams. The result is that the Federal parlors and the chambers above them have almost no flooring left. The beginning and end of this process is shown in the next two figures. Figure 91 shows a rotted roof section near the east elevation of the Federal main massing and Figure 92 shows the collapsed floor of the Federal east parlor.



Figure 91: Damaged Roof Near East Elevation of Federal Main Massing



Figure 92: Collapsed Floor of Federal East Parlor (Foreground)

As seen in Figure 92, the floor of main hall is still intact as are the floors of the inner chambers above them. These areas, however, are beginning to collapse because of the hostile open environment. The east second floor inner chamber could collapse at any time. Its floor joists are almost completely rotted and it is held up by only the stud walls attached to surviving ceiling joists above. What is left of the Federal main massing is a large cavity from the ground to the roof, with only the severely damaged exterior walls and partitions and floors of the halls and second story inner chambers still intact. Without intervention, the author estimates the entire structure of the Federal main mass will collapse within five to ten years.

The Federal west wing chamber is in better condition than the Federal main massing, but it is beginning to enter the acceleration portion of the deterioration curve. The side gable roof structure and partition wall near the west chimney is rotting out quickly. Once the first story floor joists and beams collapse, the west wing chamber will collapse inward toward the west chimney.

Not including foundation loss, some partially rotted sills and missing weatherboard, the Georgian section is in remarkably good condition. About eighty percent of the fabric of this section is intact and salvageable. For the cross hall and Federal west wing chamber, this figure is about seventy percent and for the Federal main massing, approximately forty percent.

The outer and inner surfaces of the exterior walls of the Federal main massing, particularly the north and south elevations, still have most of the finishes intact, including weatherboard, applied ornament and plaster. The Federal main massing almost resembles a Hollywood set, with intact north and south facades and an open space interior. The fact that the Federal section is standing at all is testimony to the outstanding construction techniques and materials employed by the original builders. Its large structural members, made mostly of pine heartwood, have withstood thirty years of complete neglect. Most remarkable of all, is the fact that all of the exterior walls are still almost perfectly plumb and there has been little differential settlement of the stone foundation, despite losses in key areas. Except for the sills of the cross hall, the surviving sills, plates, beams and joists are still fairly level, even those that are brown rotted. These positive aspects of the building's condition could make the stabilization phase a great deal easier than if the building was racking.

Recommendations for Stabilization

Stabilization of the building in terms of its mothballing involves two main activities: structural support and the installation of a protective membrane. Structural support begins with the foundation. All of the areas where there is stone and mortar loss need to be shored up. In

performing this task, the water in the Georgian basement needs to be drained. At the south elevation, a two foot trench could be dug and the water could drain out where the grade slopes down and away from the building.

Once the foundation repairs are performed, the building needs to be carefully cleaned out of all fallen materials, primarily consisting of plaster, wood and metal roofing. This needs to be performed for safety reasons because the weight of these materials can cause the sudden collapse of the surviving floors. Those unattached materials that can be reused, particularly wooden trim elements, should be marked and stored under cover. The same should apply to fallen large pieces of ornamental plaster and stenciled flat plaster.

Once the building is cleaned out of these dead load materials, a wooden structural endoskeleton for the Federal main massing should be constructed. Built of air-dried pressure treated stock consisting of two by fours, sixes and eights, the endoskeleton would be built inside the Federal main mass. Vertical, horizontal, and diagonal members would be fastened with heavy gauge screws and bolts so that it is structurally strong but can also be easily disassembled. The use of nails should be avoided because of damage it could cause due to vibrations from hammering. The endoskeleton would be attached to all of the surviving structural members and would be designed so that it acts both as a structure and scaffolding. The trickiest part of the operation will be securing the endoskeleton to the badly brown rotted structural members at and near the Federal east and west elevations. A series of wooden box beams or cradles surrounding these elements would be sufficient, but they need to be installed so that an outside protective membrane can be put in place. If properly designed, the endoskeleton should provide complete structural support for the Federal main massing. As will be discussed later, the design should take into account that the building may be moved. Spaces should be left open so steel girders can be placed beneath the sills when the building is moved from the foundation. The engineering requirements for moving the building are beyond the expertise of the author, but it is apparent that all of the chimneys will have to be disassembled in order to transport the building.

Once the endoskeleton is in place, the missing sections of roof can be reconstructed. A new roof membrane can then be installed. The requirements of the roof membrane should be that it is impermeable, light weight and can withstand vibrations when the building is moved. Once the membrane of the Federal main roof is installed, the same roofing material should be used on the Georgian/cross hall and west wing chamber roof. This will solve approximately ninety percent of the water penetration and brown rot problems in the building. A horizontal membrane, in the form of weatherboard, then can be installed in all areas where the framing elements are exposed

to the weather. All of the window and door openings also need to be covered. During this process, care should be taken to keep the building well-ventilated, so that heat does not build up and interior/exterior air pressure equalization is maintained.

The philosophy behind this stabilization strategy is to achieve the following:

1. Prevent further deterioration of the building. Mothballing the structure will allow it to survive until it has a viable adaptive use.
2. Save the existing fabric of the structure, even those framing elements that are badly brown rotted. Although the brown rotted elements are in too poor of a condition to be saved in the long run, and the author has strong reservations with the use of epoxy resins as a solution, these elements can still be used as templates when the building is reconstructed. The carpenters will know exactly the size and location of the framing elements, and will be able to more easily and accurately reproduce them.
3. It is a low cost solution, short of demolishing whole sections of the building. The material cost of pressure treated stock, roofing and siding materials is not that great when compared to a full blown restoration. The author estimates that the cost of stabilization could be performed for under \$100,000 or considerably less if volunteers and donations are involved. As mentioned earlier, a full blown restoration would probably exceed \$1,000,000 and is beyond the resources of the owners. It also does not make sense to restore the building if it has to be moved.
4. If done properly, the endoskeleton design will allow the building to be moved.

This is a brief overview of a viable conservation strategy and several details have been omitted. It should be mentioned, however, that for this proposal to work, a maintenance plan should be put in place. The building needs to be inspected seasonally and repairs performed as needed. Equally important, certain controls over the building's micro environment must be sustained. Plants, shrubs, vines and trees must be kept away from the building. Plants cannot only directly damage the structure, they increase the moisture content of the air surrounding the building and prevent air circulation which helps keep the building dry. The moisture content of the air and its permeation into wood elements are the means by which brown rot fungi, sapstains, and molds attack the building. The growth rate of brown rot is a function of moisture content. If the moisture content of the wood (versus the air) is maintained below twenty percent, fungi will remain dormant and cannot spread. For this reason, removal of all plant life, except grasses, within one hundred feet of the building will minimize the chances of continued fungal attack. It will also prevent branches from falling on the structure, roots from attacking the foundation, and vines from penetrating the weatherboard.

Recommendations for Adaptive Use and Efforts to Save Little Manor

The tragic state of Little Manor is as much a real estate issue as it is a preservation issue. Its isolated location, in the middle of woods and farmland with no access road, have for the last thirty years prevented it from being used as a residence. Unless a preservation conscious wealthy individual purchases the property and spends a fortune restoring the building and surrounding landscape, the building has little chance of surviving in its current location.

Little Manor can only be viable for any use if it is moved. It is near the town center of Littleton and Lake Gaston. If moved and restored, it could be used as a single or multifamily residence, a commercial establishment, institutional building or bed and breakfast. The cost of stabilizing, moving and restoring the building is so great that one funding source will likely not be adequate. A grass roots campaign must be started, not unlike that of Ann Pamela Cunningham's work in saving Mount Vernon, in which donations, volunteer work and multiple large funding sources are combined to save the building. Once restored and in a good location, a buyer can be sought. In purchasing the property, the buyer obviously will likely not be able to cover all of the expenses in saving the structure, but at least will be able to defray part of the cost. State tax credits for non-income producing historic properties, or federal and state tax credits for income-producing properties could be applied Little Manor.

It is important to mention that both Preservation North Carolina and the North Carolina SHPO have for years been actively involved in trying to save Little Manor. Their efforts have thus far failed because of ownership problems within the Skinner family. The irony is that members of the Skinner family have expressed an interest in saving Little Manor. In fairness to them, the burden of ownership of such an architecturally and historically significant structure must be enormous. This burden of ownership could be removed if the Little Manor is sold and relocated. If this is unacceptable, at least the building could be mothballed at a reasonable cost with the help of volunteers and a commitment by the Skinner family. The author is one of many such volunteers who have expressed an interest in getting involved.

In conclusion, the most difficult part of this thesis project was not the researching and writing of this report. It was traveling to Little Manor and seeing the tragic state of such a magnificent structure. As a former carpentry contractor, there was always a strong compulsion to bring tools and start fixing up the building. Hopefully, this will still happen with the owners' permission and the help of other volunteers. If nothing else, it is hoped this thesis report will contribute in some small way toward preserving Little Manor in the future.

NOTES

Chapter Two

1. National Register Form, North Carolina State Historic Preservation Office, Raleigh, North Carolina, 1973. (Author's Note: The National Register Files of the Survey and Planning Branch contained all of the information on deeds and wills and biographies of the two early owners. These materials are unpublished and unauthored), 2-12

2. Ibid., National Register Files, 2-12

3. Ibid., National Register Files, 2-12

4. Ibid., National Register Files, 2-12

5. Ibid., National Register Files, 2-12

Chapter Three

1. Charles E. Peterson, ed. , *Building Early America: Contributions toward the History of a Great Industry*. (Radnor, PA: Chilton Book Company, 1976), 11

2. Ibid., Charles E. Peterson, 17

3. Ibid., National Register Files, 2-12

Chapter Four

1. Lee Nelson, "Nail Chronology As An Aid To Dating Historic Structures", from *History News, Technical Leaflet 48* (Nashville, TN: Association for State and Local History, 1968),1-12

2. Ibid., Nelson, 1-12

APPENDIX

Selected Detail Photographs of Little Manor



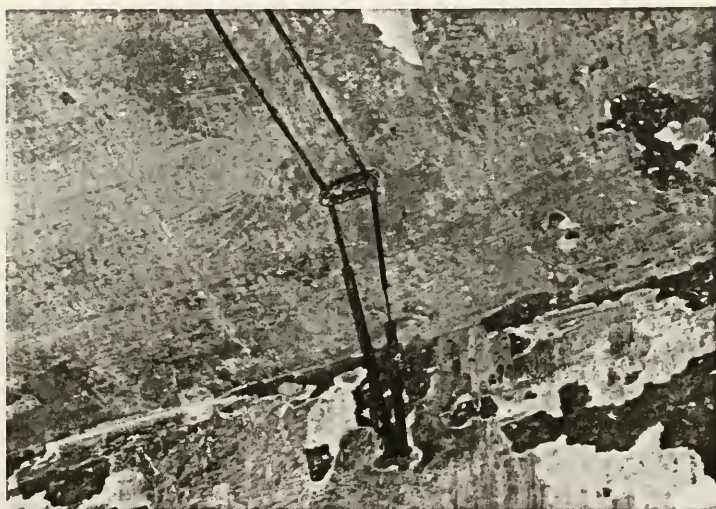
Detail of Georgian Stairs From Georgian Parlor



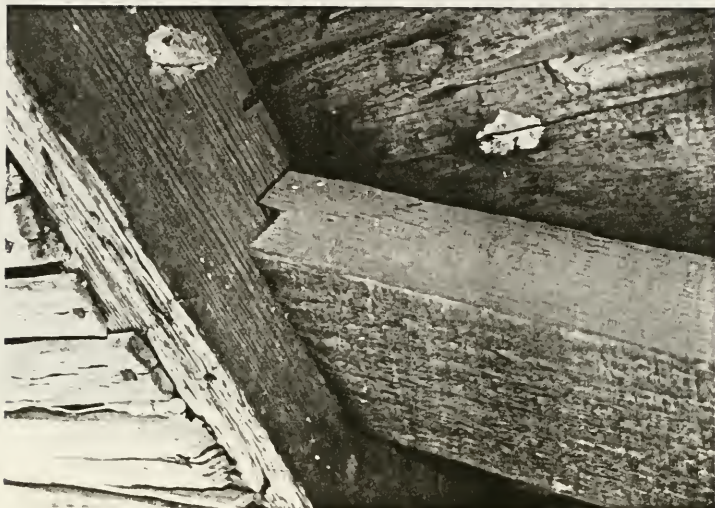
Detail of Federal Cross Hall Stairs



View of Federal Cross Hall Stairs



Early Campaign of Electrical Wiring in Georgian Parlor



Detail of Wind Brace in Georgian South Chamber



Detail of Chair Rail in Georgian South Chamber



Detail of Interior of Flush Boards of Federal Main Massing Gable



Detail of Partition Stud Lap Joint above Federal Second Floor Hall



Detail of Dragon Beam in Attic Space of Federal Main Massing



Detail of Basement Grill Jamb below Federal East Parlor

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